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THE FOUR MAJOR PROBLEMS IN GYNECOLOGY

CHAIRMAN'S ADDRESS

BARTON COOKE HIRST, M.D.

PHILADELPHIA

A long observation of the ills of womankind dictates the choice of carcinoma of the uterus, maternal mortality in childbirth, sterility and birth control as the great problems of gynecology today and in the immediate future.

CANCER

One of every eight women who reach the age of 35 will have a cancer. The disease ranks second among the causes of death in America. The mortality is increasing, rising from 63 to 96 per hundred thousand in seven years, or more than 50 per cent. In Philadelphia the mortality rose from 77.6 to 136.94 from 1907 to 1932, and in fifty American cities during the same time from 75.1 to 122.7. Of cancers in women, 25.83 are in the genital organs; 80 per cent of these are in the cervix uteri. Of four women who come to a physician with cancer of the cervix, one may survive. In spite of skilful treatment, three will die within five years. The proverbial ounce of prevention is the best treatment of cervical cancer. The late John G. Clark once said he never saw a cancer in the cervix if it had been successfully repaired. While I couldn't quite agree, undoubtedly the immediate, intermediate or secondary repair of the cervix after childbirth will usually prevent a cancer there later in life. A specific remedy for cancer may be unexpectedly discovered by the intensive study of it in all parts of the world, but at present its early recognition and prompt eradication give the best chance for a cure. Class I of the League of Nations classification of cancers of the cervix in which the disease is confined to that locality has a 50 to 80 per cent five year recovery rate: class IV, in which vagina, bowel and bladder are also involved, a cure rate of 2 per cent or none at all. The whole problem of securing better results resolves itself, therefore, into the best means of recognizing the disease early.

An important aid to an early diagnosis is Schiller's test with the use of Hinselmann's colposcope. Experience with it encourages the belief that removal and microscopic examination of the unstained cells permit the earliest diagnosis of cancer of the cervix. The colposcope may be replaced by the more economical and portable binoculars with spectacle attachment, × 2.5. For the opportunity of making early diagnoses, periodic health examinations, especially in child-bearing women, should be incessantly advocated.

In the treatment of cervical cancer the high mortality of the radical operation, the negligible mortality of radium application, the approximate equality of results, the shorter hospitalization, the absence of suffering, the palliation of symptoms, the little skill required and the fact that radium alone can be considered in advanced cases have relegated surgery to a subordinate place. It cannot, however, be ignored. It plays a predominant rôle in cancers of the genital tract other than of the cervix uteri. It must be used if radium fails. It must be considered in early cases suitable for vaginal hysterectomy without glandular involvement, with its low primary mortality (from 3.5 to 6.6 per cent, Weibel) and its high rate of permanent cure (98 per cent, Wertheim). In the recollection of gynecologists whose experience antedates radium and Wertheim's radical operation, many a permanent cure by the simple panhysterectomy is remembered. The radical hysterectomy, however, should usually be attempted if surgical treatment is adopted. To know what it is, one should have seen Wertheim do it or should read Victor Bonney's description of its technic. It is as difficult as any operation in surgery and has a mortality of 16 per cent in the hands of expert surgeons. Only unusual experience, skill and dexterity obtain better results. Wertheim himself in the first 1,000 of his 1,500 operations had a mortality of 16 per cent, and so did Bonney in his first 227. Although both reduced their mortality to 9 per cent, few could hope to rival them. The advantage of the radical operation lies in the removal of the regional pelvic glands, 21 per cent of which were cancerous in Wertheim's statistics, 43 per cent in Bonney's and 50 per cent in Heyman's. Bonney sums up the results of surgical treatment of cancer of the cervix uteri by saying that out of every hundred patients seen by the surgeon sixty are operated on, and of these twenty-five are free of the disease five years later.

The advocates of radium treatment are in the great majority. Almost all the prominent gynecologic clinics of the world have deliberately turned from surgery in cancer of the cervix to radium, not to mention the radiologic clinics with no provision for surgery.

There is a place for combined operative treatment and radium. High trachelectomy with the electric knife and radium afterward gave Clark and Norris 83 per cent of cures in early cases. The choice of radium applications or surgery will be better made by the physician who has had training in both treatments and is capable of undertaking either one.

As the results of any treatment of carcinoma of the cervix depends on the percentage of operable cases, it is interesting to note the increase of operability. It is

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understood that the conditions called operable or inoperable are determined to a certain extent by the personal equation of the examiner and that inoperable is not synonymous with incurable. As many as from 11 to 17 per cent of these so-called inoperable cases show a five year cure with radium and most gynecologists can recall an occasional patient restored to perfect health by radium when recovery seemed impossible.

Thanks to the widespread propaganda that has made women cancer conscious, too much so perhaps for their peace of mind, and has made physicians more alert in looking for it, the proportion of operability in cancers of the cervix is increasing. In 3,913 cases reported at the congress of the American College of Surgeons in October, 1932, operability averaged about 30 per cent. In 1,574 cases reported by W. P. Healy from the Memorial Hospital, 1,377 were borderline or advanced. Forssell and Heyman in Stockholm, up to 1926, treated 1,157 cases of which 73.3 per cent were inoperable. Heyman's statistics of 3,512 cases from seventeen radiologic clinics showed more than 70 per cent of inoperability. Forssell reports that in his radiumhem in Stockholm the inoperable cases increased threefold but the operable increased tenfold. Wertheim found an operability of 50 per cent, rising in his last series of cases to 54 per cent. Bonney claims an operability of 60 per cent. In Weibel's clinic in Prague in the first half of the year 1929 the operability rose to 77 per cent. These figures show a considerable rise in average operability, those that follow a corresponding increase in the proportion of cures. In 1927, Heyman in 5,024 cases collected from twenty surgical clinics and in 2,512 from seventeen radiologic clinics found a five year cure rate of 18 per cent and 16.3 per cent, respectively. In the radiumhem of Stockholm the absolute cure rate was at that time 20 per cent. In 1930 Bowing and Fricke, from the Mayo Clinic, reported a 23.87 per cent cure rate in 1,000 cases. In 1931, Healy in his report of 1,574 cases stated that a cure rate of from 20 to 22 per cent may be expected. Heyman in the same year reported a rate of 25 per cent five year cures from Stockholm. This year, George Gray Ward has reported an absolute cure rate of 24.8 per cent and Kelly, in 1,578 cases, 22.3 per cent. Lacassagne reports from the Institut du radium in Paris a cure rate of only 10 per cent in 1919 but, in 1926, 36 per cent of cures in ninety-eight cases. From 1919 to 1926, in 678 cases, the average of five year cures was 26 per cent. Voltz in Munich from 1913 to 1926 in 1,866 cases admitted and 1,723 treated, reports an absolute cure rate of 18.5, but from 1924 to 1926 in 404 cases a cure rate of 24.5 per cent. Bonney, as stated, asserts that a 25 per cent five year cure rate is the best that surgery can do, but he points out that 10 per cent of these survivors will die before the tenth year.

From 1927 to 1933, the average rate of cure has risen from 17 per cent to 28.32 per cent. The latter average should have been about 25 per cent but was raised to the figure quoted by the exceptional cure rate reported by Lacassagne in a comparatively small number of cases (98).

Cancer of the cervix uteri in pregnancy does not show an increasingly early recognition in America. There is a striking disproportion in the number of cases in pregnant women reported in this country and in Europe. In Wertheim's 3,184 cases of cancer of the cervix, operable and inoperable, 26 women were pregnant, with an operability of 96 per cent. In answer to a questionnaire directed to all the great maternity centers in America, the number of cancers of the cervix complicating pregnancy was surprisingly small. The greater prevalence of cancer in Europe accounts for this discrepancy in part but not entirely. It is probably due to a neglect of routine specular examinations in pregnant women and to a disposition to attribute irregular bleedings in pregnancy to an intra-uterine source. Another error prevalent in these cases is the postponement of treatment till after delivery instead of immediate eradication regardless of the fetus.

Accumulating statistics show a superiority of results from a combination of x-rays and radium. Voltz from Munich reports 2.2 per cent more cures from the combined treatment than from radium alone (39.3 to 41.5 per cent). There should therefore be a collaboration between the roentgenologist and the gynecologist in the treatment of cancer of the uterus.

Dr. Lee of the Memorial Hospital in New York sensibly advocates the establishment of cancer institutes in all large centers of population in the country with an ample supply of radium for local and distant use, modern x-ray equipment and a threefold activity—research, clinical treatment and instruction—with a staff of units skilled in the management of the different regional manifestations of the disease. These institutes should be in communication to standardize treatment, avoiding the diversity in the technic of radium application, its dosage, screenage, spacing of treatments and x-ray exposures observable at present in the largest cancer institutes and clinics in Europe and America. There are in Europe the well known Paris, Stockholm and Munich plans of treatment. In this country each clinic has some individual method. It should surely be possible to agree on a standardized plan giving the best results. There should be provision for both surgical and radium treatment to avoid restriction to one plan alone.

MATERNAL MORTALITY IN CHILDBIRTH

Among many advances in medical science in which America has had its share, one defect stands out all the more glaringly in contrast with so much that is creditable. The maternal mortality of childbirth in the United States is too high. After long years of indifference, this subject is attracting increasing attention both from physicians and from the public. A hopeful sign of prospective improvement is the determination of our profession to find out what is the matter with us by a survey of actual conditions conducted recently in large urban centers. A surprising result of these investigations is a mortality many times greater in hospitals than in private homes, six times greater in the Philadelphia survey with which, as one of the investigating committee, I am most familiar. To an advocate of the hospitalization of child-bearing women, this statement is disheartening but appears less so on further thought. The hospital is the clearing house for the complicated cases in its neighborhood. It is not every hospital that shows a disproportionate death rate. In the Philadelphia Lying-In Hospital in 7,068 cases the absolute maternal death rate, without any deductions, was 7.3 per thousand; the corrected death rate, 6.2 per thousand, compared favorably with maternal mortality for the United States in 1931, 6.6 per thousand. It is the poorly equipped and poorly constructed open hospitals that raise the average mortality of all hospitals. In the New York survey it appeared that fatal cesarean sections had been performed by proc-

tologists, laryngologists, anesthetists, general surgeons, roentgenologists: all sorts of physicians without any pretense to special training. Among the defects of these open hospitals are lack of provision for isolating infected cases, promiscuous mingling of maternity cases with other patients, and poor technic, described exhaustively in a recent publication by Dr. De Lee.

The solution of this problem is not the limitation of the hospitalization of maternity cases, as might be thought in view of the high institutional mortality. On the contrary, the hospitalization of these cases, already amounting to two thirds or three fourths of the deliveries in many cities, a proportion steadily increasing, should be further encouraged. The equipment of a good hospital is infinitely better than that of the best private house; a position on its staff should be a guaranty of adequate skill, and women have discovered the greater economy of the hospital delivery. Moreover, the repair of injuries of the genital tract and the correction of displacements of the uterus, in the postnatal care, which should continue for a year, eliminates more than 60 per cent of the diseases of women. The regulation of the hospital is practicable. The control of private house practice is not so feasible. The way to improvement therefore is the rigorous inspection of all hospitals receiving maternity cases; only those being licensed in which equipment, construction, character of the staff and its organization, aseptic technic, morbidity and mortality, incidence of operative deliveries and their results, prenatal and postnatal care, fetal mortality and infantile mortality reach the level of the best modern requirements. If there is a courtesy staff, its members should be allowed to attend only normal, spontaneous deliveries or at the most use low forceps and should be compelled to adhere strictly to a well established technic.

In the private house deaths, the chief fault is the lack of prenatal care. More than half the fatal cases of toxemia had inadequate antepartum attention or none at all. In addition to the regulation of the hospitals, the results of deliveries in physicians' private practice might be supervised in a modified way as they are in the midwife's practice in Philadelphia. These cases are inspected and the results reported by a corps of investigators to Dr. William R. Nicholson, who for years has devoted himself to this work with admirable self-sacrifice and public spirit. The result has been a better record of morbidity and mortality in midwives' than in physicians' practice.

The state boards of licensure should supervise maternity hospitals and, to a certain extent, private practice in such cases as well. An annual inspection of the hospitals would not be an onerous burden. The control of private practice is a more difficult matter. It could be managed tactfully in fatal cases by imitating the Philadelphia midwife supervision, physicians enjoying the confidence and respect of the communities in which they live being appointed for subdivisions of the state, to whom confidential reports and explanations of fatal results in childbirth should be made, with ultimate reference to the central board of cases in which the physician was guilty of neglect, ignorance or incompetence. Expectation of supervision would minimize carelessness or neglect by physicians. As a foundation for all improvement, the training and education of medical students in the care of child-bearing women should be improved. It is still inferior to such training in Europe in clinical material and in the time devoted to it.

It is quite plain what is the matter with us. Have we the loyalty to our profession to correct its faults?

The survey in Philadelphia coinciding in the main with others, carried out carefully by practical physicians with large experience, making every allowance for the physician in charge of a fatal case showed that half the deaths were preventable. When the public realizes that every year the lives of thousands of women in this country are needlessly lost at the most appealing period in their existence, that probably half of the 13,964 puerperal deaths in the United States in 1931 could have been prevented, there will be an irresistible demand for reform. It is to our interest to anticipate this demand voluntarily rather than have it forced on us.

STERILITY

The third problem, involuntary sterility, will be passed over hurriedly, not because it is unimportant, for no more baffling intricate problem is presented so often to the gynecologist by increasing numbers of women pathetically longing for children; but this address has already encroached too much on time better devoted to hearing the contributions to the scientific session. Moreover, the causes, treatment and prognosis of sterility are as well known to my auditors as to me. There is perhaps one item in its treatment that is not always considered. Because of the frequent references in German literature to roentgen treatment of the pituitary gland in cases of sterility, a questionnaire was sent out quite recently to the principal roentgenologic centers in this country. Many had no experience with it. A study of the statistics of those which had, as well as of the German records, made it impossible to resist the conclusion that exposure of the pituitary gland to x-rays is a necessary part of a complete treatment of sterility, as every one who has tried it must admit.

BIRTH CONTROL

Passing now to voluntary sterility or birth control, I approach a subject fraught with more momentous possible consequences to our country than any other confronting it. An undue limitation of fecundity has been one of the precursors to the extinction of a civilization or the subjugation of a people by a more virile and prolific race. The United States has already gone some distance on this road. The birth rate in 1929 was 18.9 per thousand, the lowest for any year since the establishment of the birth registration bureau in 1915, when it was 25.1 in ten states. In 1931 it was still lower, 18. An estimate of barren marriages in 1924 was 13 per cent; in 1928, 17 per cent. There were 1,232,559 marriages in the United States in 1929; in 1931 only 1,060,554, a rate of 8.55 per thousand of population, the lowest ever reported in the United States. Although the population had increased by two millions and a half there were 172,005 fewer marriages. In the report of the President's Research Committee on social trends it appears that the average size of the American family, 3.67 in 1900, 3.58 in 1920 and 3.57 in 1930, is steadily shrinking. In Philadelphia last year there were 10,000 fewer births than there were ten years ago. The birth rate in 1932 sank to 16 per thousand.

There is so much to be said on this subject that its discussion might reach unconscionable lengths. For the sake of brevity let an advocatus diaboli, reversing his usual function, plead for birth control and an opposing counsel answer him.

Pregnancy is incompatible with health or existence in some women. Birth control or sterilization in them is necessary. Artificial sterilization is justifiable to prevent the propagation of mental defectives, as in the 6,250 operations in California. It is possible to secure temporary sterility, as shown by Baskin in twenty women injected intramuscularly with 3 cc. of fresh seminal fluid and 1 cc. of caprokol (hexylresorcinol). These injections given three times, seven days apart, produce spermatoxins in the blood serum that give immunity from conception for a year. The degree of toxicity and immunity is tested at intervals of three months by bringing the woman's serum in contact with live spermatozoa. The clinical advantage of a temporary sterility in many cases is obvious.

The spacing of children contributes to the health of the mother. Longer intervals between births results in the production of superior children. A few children receive better nourishment, care and education than is possible with a large family. Infantile mortality is less in small families. Too rapid an increase in population increases the difficulty of obtaining a living wage. The removal of fear of frequent pregnancies from the wife makes the conjugal relation less liable to maladjustment. The satisfaction of the sexual urge in both husband and wife makes infidelity less likely.

Now audite alteram partem.

The first three propositions are admitted. The rest are disputed. He who believes the altruistic motives claimed for birth control, in the quaint English of Sir Thomas Browne, "looks Asquint on the face of Truth." The underlying motives of birth control are usually selfishness or fear. The bad effect on the mother of frequent child-bearing is exaggerated. Maria Theresa had sixteen children, successfully enduring nevertheless a physical and mental strain few women have to bear until she died at 63. I once attended a remarkably healthy woman in her twenty-third childbirth. It is not certain that spacing children improves their quality. Benjamin Franklin, the greatest intellect and the second figure of the American Revolution, was his father's fifteenth child. He wouldn't be born today. How many geniuses and benefactors are lost to the world! Gray, in the church yard of Stoke Poges, musing on the obscure lives of the forgotten dead buried there, were he now alive might wonder how many million mute, inglorious Miltons and Cromwells, guiltless of their countries' blood, never have a chance to live at all. It is doubtful whether the pampered child and a half of the American family is better than the child of a former generation with eight or nine brothers and sisters. The social virtues are better cultivated in a large family with the necessity for mutual concessions and for self improvement to face the battle of life. It is questionable whether the struggle for existence is so much aggravated in a dense population. There are more consumers to absorb the surplus products of mass production and to stimulate foreign trade. Belgium has a population of 680 to the square mile: the United States has only 41.3. A comparison of the welfare of the two countries would not now be much in our favor.

A lady returning to her physician after a visit to a birth control clinic was asked what she thought of it. "Oh," she replied, "it is so unromantic." She meant that the use of implements and methods employed in illegitimate intercourse lowered the spiritual level of the conjugal state. It would better comport with dignity to advise a degree of continence nearer the asceticism of the author of Religio Medici, who wished we could perpetuate our species like the trees, deploring the vulgarity of the way we do it, than the unbridled license of Augustus the Strong with his reputed 365 children. A counsel of perfection no doubt, but so should our counsel always be, whether any one follows it or not.

Articles are appearing in German literature on subjects receiving little or no attention from us: "Damage to the embryo from chemical contraceptives." "Can unsuccessful contraception harm the embryo?" "The relation of contraception to ectopic pregnancy." Dr. Schwartz and Professor Gött of Bonn report two cases each of malformed children, whose defects of development they attribute to chemical contraceptives that did not destroy but injured the spermatozoa, with the consequent formation of an imperfect product of conception. Professor Labhardt attributes a fourfold increase of tubal pregnancy in his clinic to the various contraceptive measures employed in Basle, and Professor Guggisberg of Bern finds the same conditions there. I often see acute, suppurative vaginitis due to the use of the occlusive pessary. In the opinion of most experienced observers, the long practice of contraception is one of the causes of sterility when the couple eventually desire children.

Ill fares the land, to hastening ills a prey, where the population increases by the multiplication of the inferior strata and the relative decrease of the superior. A striking example of what is meant is a comparison of the birth rate of the United States, 18 per thousand, with that of North and South Carolina, Alabama, West Virginia and Mississippi, averaging 23.7, owing to the Negroes. It is the same to a less degree everywhere. The people who could transmit the best heredity practice birth control extensively and successfully; the less intelligent, not nearly so generally or successfully. A long continuance of such conditions inevitably ends in the decadence of a race. This statement has peculiar significance for the United States. In addition to the fatal mistake of transporting Negroes to the North American continent, where they were not indigenous, the immense immigration of late years brought to this country some racial strains that were certainly not the best. These people are contributing more than their share to our population. If a breeder of live stock defied the laws of eugenics as we do, he would be ruined. We might well ask ourselves if our loss of wealth, the venal government of cities and states, the ineptitude of Congress, the prevalence of crime and the wave of dishonesty that has swept the country are signs of a deterioration in the national character.

Say what we will, contraception has passed beyond our control, but an occasional note of warning of the possible consequences should come from the superior knowledge of the medical profession.

CONCLUSION

In attempting to review so much in so short a time, I am aware that I give only the merest hints that may, perhaps, incite others to more productive thought, especially the younger members of the profession. They begin where we leave off. They commence with all the knowledge we elders gained by laborious lives of study, experience and research. We may confidently leave to them the problems vexing us. It is certain they will reach far higher levels of achievement than we have attained.

1821 Spruce Street.

SIGNIFICANCE OF THE IODINE CONTENT OF HUMAN BLOOD

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That a relation exists between the activity of the thyroid gland and the metabolism of iodine is undeniable. The thyroid hormone has a high iodine content. It is now established that iodine is a constant constituent of human blood. There is also a constant daily excretion of iodine in the urine. The level of the blood iodine varies, likewise the amount lost daily in the urine. There is a pregnant significance to these newer facts as applied to the problem of disease of the thyroid.

The nature of this relationship between goiter and iodine has been further clarified during the past decade. A part of this has resulted from studies made on the effects of iodinization. More has been learned subsequent to the development and application of more accurate micromethods for the determination of minute amounts of iodine.

After extensive investigation it has become apparent that the level of the blood iodine is influenced by changes in thyroid activity. In this our observations confirm those of Sturm, Lunde and other investigators. We shall present at this time a summary of our principal observations, reserving more extensive details for other publications.

HISTORICAL BACKGROUND

The ancient use of burnt sponge in the treatment of goiter was a fortunate empiricism. Following the discovery of iodine, its presence in sponges was soon demonstrated. As a natural consequence Coindet used iodine in the treatment of goiter in 1820. Many of the problems which he then raised are still unsolved. Since Coindet, iodine and the goiter problem have been inseparable.

Subsequent investigation led to Prevost's theory in 1849. This pointed out the relation between iodine deficiency and the incidence of goiter. It was substantiated by the chemical studies of Chatin. After the unsuccessful French experiment, in 1860, the significance of iodine received a setback. During the ensuing thirty-five years there arose other theories as to the nature of goiter. It was during this period that the theory of infection gained in credence. This was doubtless due to the contemporary discoveries of Pasteur.

Unsuccessful attempts had been made to demonstrate the presence of iodine within the thyroid gland. Baumann accomplished this in 1895. He demonstrated the isolated iodine in tubes, in its characteristic violet vapor form. The significance of this contribution was widely appreciated.

Kendall isolated thyroxine in 1919. This crystalline substance possesses certain of the physiologic properties of the dried whole thyroid gland. The isolation was repeated by Harington, who determined the correct molecular structure. Working from this he succeeded in synthesizing thyroxine. Thyroxine is 65 per cent iodine.

The next advance was in more extensive investigation of iodine metabolism. At once arose the necessity of developing methods sufficiently sensitive, and at the same time sufficiently accurate, to determine minute amounts of iodine. The thyroid iodine is readily determined by the older, coarser quantitative methods. This is not true for blood and urinary iodine. For many years various methods had been devised for the determination of iodine in food and water supplies. None of these was sufficiently delicate even to detect the minute amount of iodine normally present in the usual amount of human blood obtainable for analysis.

In 1923 von Fellenberg developed an adequate micromethod. He devised, perfected and eventually synthesized the known existing quantitative procedures into a true micromethod for the determination of iodine. This will determine 0.0001 mg. Two of von Fellenberg's pupils, Sturm and Lunde, soon applied his method in an extensive study of patients with goiter. Thus was opened a new approach to the conception of thyroid function in health and in disease.

In following the fate of iodine within the body it was inevitable that attention should be directed to the blood. In 1899, Gley and Bourcet, unable to demonstrate the presence of iodine in 100 to 200 cc. samples, used a liter of blood for analysis. They were thus able to demonstrate the presence of iodine in mammalian blood. This was subsequently confirmed by some, but denied by others. The earlier analyses were quantitatively inaccurate as judged by modern studies. The *"first modern figure"* is that of Kendall, 0.013 mg. per hundred cubic centimeters for ox blood. Attempts have subsequently been made to separate the blood iodine into an "organic" fraction and an "inorganic" fraction. The "organic" fraction is alcohol-insoluble, and is presumed to be in protein combination. The "inorganic" fraction is alcohol-soluble and dialyzable.

METHOD

The method which we have used for the determination of iodine in the blood and urine is one that requires experience and a certain amount of technical skill. Its success in the ordinary clinical laboratory would be doubtful. The basic chemical principles involved are those developed by von Fellenberg. An automatically controlled muffle furnace and an electric hot plate have been utilized for standardization and economy of time.

The blood or urine to be analyzed is measured into a nickel crucible and mixed with an adequate amount of potassium hydroxide. This binds the iodine and also facilitates the hydrolysis of the organic matter present. After ashing completely the content of the crucible, at a carefully controlled optimum temperature, the water-soluble salts are extracted. This extract is evaporated to dryness. The salts soluble in alcohol are then extracted with 95 per cent ethyl alcohol. The alcohol is evaporated. The dry film containing the iodine salts is dissolved in water. The p_H is adjusted. The iodides present are oxidized to iodates with chlorine water. The excess chlorine is boiled off. A crystal of potassium iodide is next added and the quantitatively liberated elemental iodine is titrated with thousandth-normal sodium thiosulphate, using starch as an indicator.

NORMAL BLOOD IODINE

The average normal iodine content of human blood examined in Chicago is about 12 γ per hundred cubic

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centimeters. This level falls during the winter months. It is elevated during early menstruation and pregnancy. It is higher if the person is taking iodized salt regularly. In fact, many observations show that it is elevated by any form of iodine medication that has thus far been studied. Owing to the minute amount of iodine normally present within the blood, a special term of designation has been widely adopted. This, a gamma (γ) or microgram, is 0.001 mg. Thus, 100 cc. of human blood normally contains 0.012 mg. of iodine. The total iodine contained in the entire human blood stream is consequently less than 1 mg.

Eight determinations, made on six normal members of the Billings Hospital staff, revealed a range of from 8.9 to 13.8 and an average of 12 γ per hundred cubic centimeters. The determinations on the women were made during the intermenstrual period, since the blood iodine usually rises during the onset of menstruation. Corresponding basal metabolic determinations were not made; however, these persons showed no evidence of abnormal thyroid function or of disease.

A second series of thirteen determinations was made on unselected hospital patients without evidence of thyroid disease. No iodized salt was used in the hospital diet. Blood was drawn in the postabsorptive state. The average value was 12.3 γ per hundred cubic centimeters. In the majority of hospital patients without evidence of abnormal thyroid function the blood iodine is normal. There are certain notable exceptions, such as acute severe infections and lymphatic leukemia, in which the blood iodine is elevated. These will be mentioned later. The significance of the elevated iodine of the blood in lymphatic leukemia merits further investigation.

A third series of determinations was made on twelve ambulatory patients visiting the outpatient department. Their diets, consequently, were not controlled, and certain of the bloods were not drawn in the postabsorptive state. The range, from 8.5 to 16.2 γ, is thus greater. Nevertheless, the average level, 11.4 γ per hundred cubic centimeters, is essentially that which we have found to be normal. None of these patients was using iodized salt, and none was acutely ill. Their ages ranged from 6 to 48 years. In all, thirty-four determinations on twenty-eight persons in Chicago without evidence of thyroid disease showed a range of 8.5 to 16.2 and an average level of 11.9 γ per hundred cubic centimeters.

The blood iodine of twenty-five normal persons in Columbus, determined from December to March inclusive, showed a range of from 5.2 to 14.2 and an average level of 10.1 γ per hundred cubic centimeters. There is thus a lowering of the normal level of the blood iodine during the winter months. This was originally observed by Veil and Sturm. The basal metabolic rate, determined in each of these persons just previous to drawing the blood, ranged from minus 11 to plus 15, averaging plus 2. No direct correlation between the level of the blood iodine and that of the basal metabolic rate has been established. The average level of the blood iodine in the females was definitely lower than that in the males.

EXOPHTHALMIC GOITER

In patients with diffuse hyperplastic goiter, presenting the characteristic symptoms of hyperthyroidism and with varying degrees of exophthalmos, the blood iodine is consistently elevated. It falls to a certain extent on rest in bed. It remains elevated after the first stage of a two-stage lobectomy or after an inadequate thyroidectomy. It falls to a low normal level subsequent to the adequate removal of the goiter.

In eleven of these patients the initial level of the blood iodine, determined before the institution of rest in bed and the initiation of iodine therapy, ranged from 16.9 to 40.1, averaging 27.1 γ per hundred cubic centimeters. This is more than twice the normal level. The initial basal metabolic rate in these eleven patients ranged from plus 22 to plus 96, averaging plus 50. No direct correlation has been observed between the level of the elevated blood iodine and that of the increased basal metabolic rate.

The institution of complete rest in bed frequently results in a subsequent lowering of the elevated blood iodine. There is usually some accompanying fall in the basal metabolic rate. This fact is of theoretical interest in connection with the extent of increased thyroid secretion during physical activity. It merits further investigation.

Subsequent to the administration of iodine to patients with exophthalmic goiter there ensues a marked rise in the level of the blood iodine. During treatment with compound solution of iodine this may even reach 600 γ per hundred cubic centimeters. This elevated level is irregularly maintained so long as iodine is administered. It quickly falls on cessation of iodine administration. It also falls following thyroidectomy, but continues elevated above normal as long as iodine is given postoperatively. After the cessation of iodine medication, if the thyroidectomy is adequate, the blood iodine promptly falls to a low normal level.

If the thyroidectomy is inadequate, the elevated blood iodine does not subsequently fall to a low normal level. Likewise, following the first lobectomy of a two-stage operation the blood iodine remains elevated. In four of these patients the range was from 19.4 to 32.0, averaging 27.1 γ per hundred cubic centimeters. The average basal metabolic rate in these patients was plus 31. This may be interpreted as further evidence that the elevated blood iodine is due to hypersecretion by the goiter of the high iodine-containing thyroid hormone.

After an adequate thyroidectomy, followed by the usual abatement of the characteristic symptoms, together with the subsequent fall in the basal metabolic rate, the blood iodine falls to a low normal level. In twelve such patients the range was from 8.7 to 14.3 γ per hundred cubic centimeters, averaging 10.4 γ. The average basal metabolic rate was minus 6. All these determinations were made on patients who were not receiving iodine medication.

Children with exophthalmic goiter likewise present, along with the high basal metabolic rate, an elevated blood iodine. This behaves as does that of adults during the management of the disease. There thus appears to be a definite relationship between the elevation of the blood iodine and the course of exophthalmic goiter.

TOXIC NODULAR GOITER

The blood iodine is also elevated in patients with nodular goiter who present an increased basal metabolic rate and the symptomatic evidence of hyperthyroidism. The elevated blood iodine of these patients falls to a low normal level subsequent to an adequate thyroidec-

tomy. In eleven of these patients the initial blood iodine, previous to the institution of iodine therapy, ranged from 14.1 to 38.1, averaging 22.0 γ per hundred cubic centimeters. The basal metabolic rate of these patients averaged plus 26. The lesser elevation of the blood iodine in toxic nodular goiter thus corresponds to the lesser increase of the basal metabolic rate and, in general, to the lesser severity of the disease. In these patients there was likewise no direct correlation between the increase in the basal metabolic rate and the elevation of the blood iodine.

Twenty-three determinations of the blood iodine were made on twelve of these patients after an adequate thyroidectomy. These all were after the cessation of iodine medication. The range was from 5.5 to 16.9 γ per hundred cubic centimeters. The average was 10.4 γ. The average corresponding basal metabolic rate of these patients was minus 4.

The behavior of the blood iodine, following administration of iodine to patients with toxic nodular goiter, is similar to its behavior in those with exophthalmic goiter. No essential difference has thus far been established. It remains irregularly high as long as iodine is administered. The height of this elevated level depends on how long previously iodine was given, since a large part of the administered iodine is rapidly excreted in the urine.

INDUCED HYPERTHYROIDISM

In patients who are being treated daily with unwarranted amounts of desiccated thyroid, the blood iodine is elevated. If excessive amounts are given over an extended period of time the blood iodine becomes as high as it is found to be in exophthalmic goiter. It falls to a normal level on the complete cessation of thyroid medication.

In one patient, who had been given elsewhere 10 grains (0.64 Gm.) of desiccated thyroid daily, over a period of six weeks, the blood iodine was 37.7 γ per hundred cubic centimeters. The characteristic symptoms of hyperthyroidism were present. The basal metabolic rate was elevated to plus 29. There was a marked increase in the urinary excretion of iodine. Thyroid medication was completely stopped at once. The blood iodine then fell to 15.8 γ per hundred cubic centimeters. The basal metabolic rate decreased to minus 4, and the urinary excretion of iodine fell to a low normal range.

Stopping the excessive medication of desiccated thyroid had, in this instance, the same effect as an adequate thyroidectomy. There was a striking correlation between the iodine metabolism of this patient and of one with toxic goiter. This we are inclined to regard as further evidence that the high blood iodine in toxic goiter is due to hypersecretion, and in this case to hypermedication, of the high iodine-containing thyroid hormone.

NONTOXIC GOITER

In patients with nontoxic goiter the blood iodine usually is within the normal range. It has been observed at the upper normal limit in certain patients with nontoxic diffuse colloid goiter. In patients with nontoxic nodular goiter it is at a low normal level. After thyroidectomy there is an immediate fall in the level of the blood iodine. After an extended period the blood iodine is found to be within the normal range.

Eighteen determinations made on ten patients with nontoxic nodular goiter revealed a range of from 6.3 to 12.7 γ per hundred cubic centimeters. The average was 10.4 γ. The average basal metabolic rate of these patients was minus 4. Their ages ranged from 11 to 60 years. The lowest values were found in those patients with nodular goiters of long standing, in which there were extensive cystic degeneration and other evidences of destruction of the secreting alveoli. The iodine content of the nodular goiter with such changes is very low.

The blood iodine is at a low level in patients with adolescent goiter. The presence of small nodules within these goiters appears to have no demonstrable relation to the level of the blood iodine. There is no apparent relation between the size of the goiter and the level of the blood iodine.

Six determinations of the blood iodine in patients with nontoxic nodular goiter after thyroidectomy revealed a range of from 9.7 to 12.7 and an average of 11.2 γ per hundred cubic centimeters. In these patients more of the thyroid was left behind than after a subtotal thyroidectomy, owing to the absence of toxicity. The basal metabolic rate of these patients averaged minus 6.

HYPOTHYROIDISM

The blood iodine is low in patients with hypothyroidism. This has been observed in patients with congenital cretinism, in those with diffuse juvenile goiter accompanied by a low basal metabolic rate and presenting symptomatic evidence of hypothyroidism and in patients with postoperative myxedema. Twelve determinations made on the blood of these patients revealed a range of from 7.2 to 11.0 γ per hundred cubic centimeters. The average of this series was 9.5 γ. This is 20 per cent lower than the normal average. The basal metabolic rate of this series ranged from minus 16 to minus 35, averaging minus 22. The lowering of the blood iodine in hypothyroidism is thus partial. There is presumably other iodine within the blood stream than that due to the actual thyroid secretion. In fact, Lunde has separated the blood iodine into an alcohol insoluble "organic" fraction and an alcohol-soluble "inorganic" fraction. We have not yet attempted to make this differential analysis.

Administration of desiccated thyroid, or of thyroxin, U. S. P., to these patients results in an immediate rise of the low level of blood iodine. On continued adequate administration the increased level is eventually stabilized at a high normal range. Nine determinations made on five patients receiving varying amounts of desiccated thyroid daily revealed a range of from 10.6 to 23.3 γ per hundred cubic centimeters. The average basal metabolic rate of these patients was minus 6. The highest value, 23.3, was obtained from a patient who had been given 4 grains (0.26 Gm.) of desiccated thyroid daily for five days. The lowest value, 10.6, was shown by a patient who had taken a quarter of a grain (0.016 Gm.) of desiccated thyroid daily for over a year. Both of these patients had previously developed myxedema following thyroidectomy.

FAMILIAL THYROID DISEASE

Members of the same family, living under similar conditions, may manifest varying pictures of thyroid disease accompanied by striking variations of the evidence of thyroid function. Investigation of the blood iodine of these persons reveals characteristic differences in the level of the blood iodine. Thus, in one family, the mother, aged 33, had a nodular goiter with an

elevated basal metabolic rate and the symptoms of hyperthyroidism. Her blood iodine was elevated, but fell to a normal level after thyroidectomy. The son, aged 12, with a diffuse juvenile goiter and the symptoms of hypothyroidism, had a basal metabolic rate of minus 18 and a low level of blood iodine. This was elevated by the administration of desiccated thyroid. The daughter, aged 11, also with diffuse goiter and hypothyroidism, revealed a basal metabolic rate of minus 16 and a blood iodine of 9.7 γ per hundred cubic centimeters. This was elevated to 33.8 γ after the administration of 3 grains (0.19 Gm.) of desiccated thyroid daily for two weeks. It was also elevated by the administration of iodine. Another son, aged 6 years, without evident goiter and with apparently normal thyroid function, revealed a normal blood iodine of 12.7 γ per hundred cubic centimeters. At specified intervals blood was drawn simultaneously from each of these persons during a visit to the clinic. The determinations of the blood iodine revealed characteristic variations depending on the nature of the thyroid disease and the treatment employed. The group thus served as controls, since they were living under similar conditions and taking the same diet. The environment of all was the same, hence the variations in the blood iodine were regarded as due to varying thyroid function or to the iodine in the medication.

OTHER THYROID CONDITIONS

It is recognized that patients with diffuse hyperplastic goiter and hyperthyroidism may develop exophthalmos subsequent to an adequate thyroidectomy. These patients are found to be metabolically normal. We have found the basal metabolic rate and blood iodine to be normal. Hence there has been found no direct evidence of residual hyperthyroidism.

In one of the patients investigated, the postoperative exophthalmos measured 19 mm. on the right side and 21 mm. on the left. The normal is 16. It was thus unequal. The basal metabolic rate averaged minus 5. The blood iodine averaged 9.6 γ per hundred cubic centimeters. There was a persistent lymphocytosis of 60 per cent. The development of postoperative exophthalmos thus appears to be due to other factors than the hyperthyroidism.

In patients with Riedel's struma the blood iodine is at a low normal range. We have not observed significant changes in patients presenting the so-called "Graves constitution."

OTHER DISEASES

The majority of hospital patients present a normal blood iodine. Among the diseases investigated are tuberculosis, chronic osteomyelitis, fractures and Hodgkin's disease. The blood iodine is normal in patients with cancer. There are, however, two striking exceptions. In acute severe infections, as in septicemia, the blood iodine is elevated. It is likewise elevated in lymphatic leukemia. In the latter disease there is also an elevated basal metabolic rate, a response to iodine and a lymphocytosis. There would appear to be some significance to the lymphocytosis since it occurs so frequently in thyroid disease.

URINARY IODINE

It would thus appear to be established that there is a definite relationship between the blood iodine niveau and thyroid function. Since the urinary excretion of crystalloids is intimately related to their level in the blood, we have investigated the urinary excretion of iodine in patients with thyroid disease.

The normal excretion of urinary iodine in central Ohio is between 25 and 75 γ daily. It is increased in patients with toxic goiter. This increase is particularly noted in the early exacerbation of hyperthyroidism in patients with diffuse hyperplastic goiter. It is increased in patients with toxic nodular goiter. In patients with diffuse nontoxic colloid goiter it is normal. It is increased in patients with induced hyperthyroidism.

During the onset of menstruation there occurs a rise in the blood iodine. There is also an increased urinary excretion of iodine. This would further establish the overactivity of the thyroid during menstruation.

Daily medication with 30 drops of a mixture of inorganic and elemental iodine results in a tremendous increase in the urinary excretion of iodine. It would seem that this is an unnecessarily large amount to administer, since so great a proportion is excreted in the urine.

Following the daily administration of 10 mg. of iodine, in the preparation of patients with exophthalmic goiter for thyroidectomy, there ensues an increasing urinary excretion of iodine. This is presumably due to the early replacement of iodine in the depleted thyroid gland and tissues.

SUMMARY

The iodine content of human blood is thus a measure of thyroid function. Demonstrable changes in the level of the blood iodine accompany those diseases in which thyroid function is altered. The fluctuation of the blood iodine during the course of thyroid disease under management is significant. The blood iodine is increased in thyroid hyperfunction. It is lowered in thyroid hypofunction. It is always elevated by any form of iodine medication. It would seem that the level of the blood iodine is controlled by thyroid activity. There are corresponding changes in the urinary excretion of iodine. This increases in thyroid hyperfunction. It likewise is increased on any form of iodine medication.

Simultaneous investigation of the basal metabolic rate, the level of the blood iodine and the urinary excretion of iodine reveals significant evidence of thyroid activity. The significance of the blood iodine in thyroid disease is similar to that of the blood sugar in diabetes mellitus and to that of the blood calcium in parathyroid disease.

ABSTRACT OF DISCUSSION

DR. WILLARD O. THOMPSON, Chicago: These observations are important because they are quantitative. The concentration of iodine in the blood may vary greatly with the intake of iodine. The significance of these observations lies largely in the fact that they were made during a period of minimum iodine intake. It is of interest that their normal value of 0.012 mg. per hundred cubic centimeters is about the same as that found by three other observers in different parts of Europe and approximately the same as that observed in ox blood by Kendall. I would call attention to how well their observations in thyroid disease are correlated with changes in the basal metabolism. Changes in the excretion of iodine in the urine parallel changes in the concentration of iodine in the blood. The recent observations of Dr. Lundy of Oslo are in accord with those of the authors. Dr. Lundy tried to separate the iodine of the blood into its organic and inorganic components and reported that the organic fraction was high in exophthalmic goiter before treatment and dropped in associa-

tion with the metabolism during the administration of iodine and following a subtotal thyroidectomy. Because of data thus far accumulated, it seems difficult to escape the conclusion that in exophthalmic goiter there is an overproduction of thyroxine or some thyroxine-like substance by the thyroid and that this substance does not appear to be deficient in iodine. It would be of interest to know whether there is a parallelism between the height of the basal metabolism and the concentration of iodine in the blood in exophthalmic goiter. The total blood iodine in exophthalmic goiter was about 0.028 mg. per hundred cubic centimeters on the average, or about two and one-third times the normal. The basal metabolism in this condition is about plus 50 per cent on the average with the patients at rest in bed. In myxedema about 0.35 mg. of thyroxine must be injected intravenously every day in order to hold the basal metabolism at the standard normal level. If the figures in exophthalmic goiter bear any relation to the rate of formation of thyroxine, it is being formed at the rate of about 0.77 mg. a day on the average. Dr. Plummer found that the daily administration of 1 mg. of thyroxine in patients with no functioning thyroid tissue resulted in the basal metabolism being held at a level from 20 to 50 per cent above the normal. These figures of from 0.7 to 1 mg. of thyroxine are of interest because they are correlated with my observation that the minimum amount of iodine that must be administered to produce a maximum reduction in basal metabolism in exophthalmic goiter is about 6 mg. a day.

DR. R. J. TURNER, Detroit: This report has clearly shown the relationship between thyroid disease and blood iodine concentration. Most interesting are the studies on the blood iodine concentration after thyroidectomy. The fall over the high preoperative iodine value shows the regulating effect of the thyroid gland on the concentration of iodine in the blood. There is a question as to whether this increase in iodine due to overactivity of the gland is sensitive enough to detect slight changes in the vegetative nervous system. My studies on hyperthyroid cases showed about 66 per cent with an increase over the normal iodine concentration, about 33 per cent being normal. Possibly the estimation of iodine in the organic and inorganic form separately might show a closer relationship in regard to the small changes in the iodine concentration.

DR. GEORGE M. CURTIS, Columbus, Ohio: I appreciate greatly the discussion that has been given this problem. These blood and urine iodine determinations have been done entirely by my associates, Dr. Chester Davis, Dr. Versa Cole and Mr. Francis Phillips. We have added further evidence that exophthalmic goiter is a hyperthyroidism. Not only is the blood iodine high, but it falls to a low, normal level following adequate thyroidectomy. It does not fall to a low, normal level between the stages of a two-stage lobectomy or after an inadequate thyroidectomy. We have recently discovered that the urinary excretion of iodine is increased during the early exacerbation of hyperthyroidism in patients with exophthalmic goiter. This is correlated with the known fact that the thyroid gland in exophthalmic goiter contains a low quantity of iodine. It may be that this iodine loss by the gland is also participated in by the tissues. That will remain for further investigation. There is a variation in the concentration of the iodine content of the blood. This, so far as we are able to determine, is not directly correlated with the basal metabolic rate. Any form of iodine medication raises the level of the blood iodine. Administration of iodized oil in any form raises enormously the iodine content of the blood. Iodine is absorbed rapidly after such administration. We have to be extremely careful that our patients are not being medicated with iodine in any form. Those patients uniformly have elevation of the urinary excretion of iodine and of the blood iodine. When 10 mg. of iodine is given daily to patients with exophthalmic goiter, at first the urinary excretion is low. Presumably the iodine is going into the depleted gland and tissues. Later when those thyroids are examined, they have a much higher iodine content than they did previous to the administration of iodine. This is correlated with the increased activity of the thyroid cells in the formation and storage of colloid. The significance of the iodine content of the blood in thyroid disease is essentially the same as the significance of the sugar content of the blood in diseases of the islands of Langerhans, and of the calcium content of the blood in diseases of the parathyroid glands.

SPONTANEOUS DISLOCATION OF THE LACRIMAL GLANDS

REVIEW OF THE LITERATURE, REPORT OF A CASE, AND TECHNIC OF SURGICAL CORRECTION

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Displacement of the lacrimal gland occurs with greater frequency than can be inferred from modern textbooks on ophthalmology. In 1903, Roy [1] presented a case of spontaneous prolapse of the lacrimal gland. Wadsworth [2] stated that he had "seen a considerable number of cases of prolapse, none traumatic, and only one inflammatory. One case was bilateral in a middle-aged man and had been present since childhood." Jackson [3] cited two cases of spontaneous prolapse and stated that the condition was more common than the literature indicated. Since Roy's presentation only two references have been made to dislocation in this country, by Tyson [4] in 1911 and by Curtin [5] in 1915.

In 1895, the Russian ophthalmologist Golovin [6] made the first report on bilateral displacement of the lacrimal gland and assigned to the disease the name "dislocatio glandulae lacrymalis spontanea sive glandula lacrymalis mobilis." He considered this condition as a separate disease entity and one to be differentiated from blepharochalasis and ptosis adiposa. His views received no acceptance in this country, although in Europe considerable discussion appeared regarding this condition. In 1930, Golovin [7] stated that he had seen at least fifteen cases of spontaneous dislocation. Fuchs [8] believed that relaxation of the skin of the upper lids in young patients occurs in only two conditions, ptosis adiposa (without, however, accumulation of fat) and blepharochalasis. He did not make any mention of dislocation of the lacrimal gland as an accompaniment or a complication of either of these diseases. Ruszkovski [9] and Avižonis [10] believe that dislocation of the lacrimal gland is a primary manifestation in the pathogenesis of blepharochalasis. Scrini,[11] Weinstein,[12] Velikanov [13]

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1. Roy, Dunbar: Spontaneous Prolapse of Lacrimal Glands, Tr. Am. Ophth. Soc. **10:** 182, 1903.
2. Wadsworth, O. F., in discussion on Roy.[1]
3. Jackson, E.: Abst., Ophth. Year Book **7:** 171, 1905.
4. Tyson, H. H.: Dislocation of Lacrimal Glands Associated with Basedow's Disease, Arch. Ophth. **42:** 511, 1913.
5. Curtin, T. H.: Dislocation of Lacrimal Glands, Arch. Ophth. **44:** 553, 1915.
6. Golovin, S. S.: Spontaneous Prolapse of Lacrimal Glands, Clin. Maitop., Moskow **5:** 930, 1895; Displacement of Lacrimal Glands, Arch. d'opht. **16:** 104, 1896.
7. Golovin, S. S.: quoted by Avižonis.[10]
8. Fuchs, Ernst: Ueber Blepharochalasis (Erschlaffung der Lidhaut), Wien. klin. Wchnschr. **7:** 109, 1896.
9. Ruszkovski, J.: quoted by Avižonis.[10]
10. Avižonis, P.: Ueber spontane Senkung der orbitalen, Tränendrüse, Ztschr. f. Augenh. **77:** 167 (May) 1932.
11. Scrini: Des glandes lacrymales orbitaires mobiles, Arch. d'opht. **25:** 592, 1905.
12. Weinstein, A.: Ueber zwei eigenartige formen des Herabhangens der Haut der Oberlider: Ptosis atrophica und Ptosis adiposa. Ein Fall von Ptosis adiposa mit spontaner Senkung der Tränendrüse, Klin. Monatsbl. f. Augenh. **47:** 190, 1909.
13. The Russian literature on dislocation of the lacrimal gland:
Donin, I. C.: Russk. j. oftal. **12:** 376, 1930.
Bursuk, G. G.: Russk. j. oftal. **11:** 831, 1930.
Lotin, A. A.: Russk. j. oftal. **11:** 831, 1930.
Solovgov, L. K.: Russk. j. oftal. **11:** 831, 1930.
Sceglova, A.: Russk. arch. f. ophth. **7:** 914, 1930.
Tokareva: Russk. j. oftal. **9:** 373, 1929.
Hecker, J.: Dnjepropetrovskij med. **7:** 57, 1928.
Mursin, A. N.: Russk. j. oftal. **6:** 1192, 1927.
Krassovskaja, K. M.: Russk. j. oftal. **6:** 411, 1927.
Snegirev, K. W.: Russk. j. oftal. **6:** 312, 1927.
Strachov, W. P.: Russk. j. oftal. **6:** 312, 1927.
Sapir, J. M.: Russk. j. oftal. **5:** 76, 1926.
Judin, K. A.: Vestnik oftalmol. **28:** 943, 1911.
Filatov, W. P.: Vestnik oftalmol. **26:** 343, 1909.
Velikanov, A. N.: Vestnik oftalmol. **26:** 120, 1909.
Averbach, M. O.: Vestnik oftalmol., July-Oct., 1902.

and Löhlein [14] contend that dislocation occurs frequently and would be discovered more often by careful examination. Elschnig and Stock [15] do not view dislocation of the lacrimal gland as a separate entity and consider that it is merely a secondary development of blepharochalasis. The Russian school has adhered to Golovin's dictum, and seventeen cases of uncomplicated dislocation of the lacrimal glands appear in Russian journals, most of which have been reported during the past six years.[13] In the literature on blepharochalasis and ptosis adiposa, many examples of dislocation of the lacrimal gland are noted as a coincidental finding (Loeser,[16] Weinstein,[12] Weidler,[17] Weidemann,[18] Cronstedt [19]). From the reports and photographs accompanying them, dislocation of the lacrimal gland suggests itself as the primary diagnosis producing changes in the tissue of the upper lid on which the diagnosis of blepharochalasis and ptosis adiposa was based. Van Heuven [20] reported a case of dermoid of the lid and another of lipodermoid, in both of which operations were performed and in which pathologic examination revealed normal lacrimal glands. His postoperative diagnosis was dislocation of

Fig. 1.—Spontaneous dislocation of the lacrimal glands.

the lacrimal gland. Avižonis, director of the ophthalmic clinic at the University of Kovno, Lithuania, reported twenty cases of dislocation in 1929 [21] and a total of forty-three cases which he had personally observed in 1932.[10] The lacrimal glands were readily palpable in his series as movable tumors beneath the skin of the lid. He is very enthusiastic about the frequency with which dislocation occurs, and there is a possibility that some of his cases did not fall entirely within the scope of this classification. Further difficulty in separating these three diseases is caused by the lack of uniformity of nomenclature. The following terms are encountered in considering displacement of the lacrimal gland: ptosis,

Fig. 2.—Dislocation of the left lacrimal gland (conjunctival aspect).

hypertrophy (Shoemaker,[22] Lambert,[23] Argyll Robertson [24]), prolapse (Noyes [25]), luxation, dacryo-adenoptosis, movable lacrimal gland, dislocation (Snell,[26] Cronstedt [27]) and displacement (Cholous,[28] Mazet,[29] Syme,[30] Terrien [31]).

Spontaneous dislocation is observed chiefly in young patients, in whom it is usually present since early childhood. In a small proportion of cases it is congenital. In 85 per cent of cases reported the dislocation was bilateral and the incidence in males and females about equal. Factors to be considered in its production are congenital weakness of supporting structures of the gland (Holmes,[32] Jones,[33] Genet [34]), anatomic differences in the structure of the orbit, heredity (Löhlein,[14] in a father and daughter; Lafon and Villemonte,[35]

14. Löhlein, W.: Hereditary Dislocation of Lacrimal Gland, Wchnschr. f. therap. Hyg. d. Auges. **22:** 157, 1919.
15. Stock, W.: Die Pathologie der Tränenorgane, in Graefe-Saemisch: Handbuch der gesamten Augenheilkunde, Leipzig, Wilhelm Englemann, 1925.
16. Loeser, L.: Ueber Blepharochalasis und ihre Beziehung zu verwandten Krankheitsbildern nebst Mitteilung eines Falles von Blepharochalasis mit Spontan-Luxation der Tränendrüse, Arch. f. Augenh. **61:** 252, 1908.
17. Weidler, W. B.: Blepharochalasis, Tr. Sect. Ophth., A. M. A., 1913, p. 339.
18. Weidemann, M.: Ein Beitrag zur Kenntnis der Ptosis adiposa nebst Mitteilung eines Falles mit spontaner Senkung der Tränendrüse, Dissert. Königsberg, 1911.
19. Cronstedt, L.: Ptosis Atonica or Blepharochalasis with Bilateral Dislocation of the Lacrimal Glands, Acta ophth. **4:** 177, 1927.
20. Van Heuven, J. A.: Dislocation of Lacrimal Gland, Nederl. tijdschr. v. geneesk. **2:** 3566 (July 21) 1928.
21. Avižonis, P.: Dislocatio Glandulae lacrymalis spontanea, Russk. j. oftal. **10:** 423, 1929.
22. Shoemaker, W. T.: A Case of Bilateral Enlargement of the Lacrimal Glands, Ann. Ophth. **13:** 513, 1904.
23. Lambert: Hypertrophy of Lacrimal Glands, Tr. Am. Ophth. Soc., **9:** 403, 1900-1902.
24. Argyll Robertson, Douglas: A Case of Enlargement and Displacement of the Lacrimal Gland into the Upper Eyelid, Tr. Med.-Chir. Soc. Edinburgh **6:** 224, 1887.
25. Noyes, H. D.: Spontaneous Prolapse of the Lacrimal Gland: Its Extirpation, Tr. Am. Ophth. Soc., **4:** 494, 1887.
26. Snell, S.: A Case of Dislocation of the Lacrimal Gland, Ophth. Rev. **1:** 207, 1881-1882.
27. Cronstedt, L.: Bilateral Dislocation of the Lacrimal Glands, Upsala läkaref. förh. **32:** 15 (Feb.) 1927.
28. Cholous, B.: Etudes sur les déplacements dè la glande lacrymale orbitaire, Thèse de Paris, 1898.
29. Mazet: Sur un cas de déplacement spontane, ou ptose de la glande lacrymale, Bull. et mém Soc. franç. d'opht. **21:** 222, 1904.
30. Syme, W. G.: A Case of Spontaneous Displacement of the Lacrymal Gland, Edinburgh M. J. **33:** 31, 1887.
31. Terrien, F.: Hypertrophie et déplacement de la gland lacrymale, Bull. Soc. d'opht. de Paris **14:** 119, 1901.
32. Holmes, C. R.: Extirpation of the Lacrimal Sacs and the Lacrimal Glands, Arch. Ophth. **28:** 1, 1899.
33. Jones, L. W.: Congenital Dislocation of the Lacrimal Gland, Ophthalmology **7:** 17, 1911.
34. Genet, M. L.: Ectopie des deux glandes lacrymales orbitaires. Ablation des deux glands, Ann. d'ocul. **168:** 670, 1931.
35. Lafon, C., and Villemonte, M.: Hereditary Blepharochalasis with Luxation of Lacrimal Gland, Arch. d'opht. **26:** 243, 1906.

through four generations; Avižonis,[10] in a mother and son and in a father and daughter); antecedent inflammations in the gland (Duhamel,[36] after tear gas poisoning; Pritchard,[37] after excessive weeping, and Golovin,[6] after mumps), and, finally, lack of lid support from rapid absorption of orbital fat (Tyson,[4] loss of 38 pounds [17.2 Kg.] in two months in exophthalmic goiter). Ascher [38] reports on the syndrome of blepharochalasis, goiter and double lip. In ten cases typical double lip was found in seven, thick upper lips in two, without, however, duplicature of the mucous membrane. Avižonis found double lip in two of his cases.

The diagnosis is made by the presence of a pouch of elongated skin of the lid, which usually covers the cilia in the lateral half. No inflammatory reaction is present in the skin. A mass resembling an almond in size and shape is easily palpated below the lacrimal fossa. When an attempt is made to grasp this mass between the examining fingers, it slips quickly back into the orbit. The gland may be either partially or completely dislocated from its normal anatomic situation, and the

Fig. 3.—Final result. Photograph taken after excision of excessive skin from the left upper lid.

extent of the thinning and overfolding of the skin of the lid is dependent on the extent of the prolapse and the duration of the disease. In complete dislocation the palpebral lobe of the lacrimal gland can be seen lying on the eyeball if the lid is elevated and the patient's gaze directed nasally and inferiorly.

A knowledge of the anatomy of the gland is necessary in the consideration of the disease and its diagnosis. It lies deep beneath the lateral part of the upper eyelid covered in front by the septum orbitale (tarsoorbital fascia), orbicularis oculi muscle, and skin, and is placed just within the orbital margin, wedged in between the lateral angular process of the frontal bone and the globe; the bone is slightly hollowed out for its reception, so forming the fossa glandulae lacrimalis, in the lower and forepart of which it mainly lies; posteriorly, the gland is adherent to a mass of orbital fat which fills the hind part of the fossa (*loge accessoire*—Duvigneaud). The gland extends downward as low as

Fig. 4.—Conjunctival view two months after successful replacement operation.

the zygomaticofrontal suture. According to Whitnall,[39] the ligaments which have been described as keeping the gland in position have no special degree of development, and he believes that the application of the term "ligament" is pretentious and misleading. The gland is kept in position between the globe and frontal bone, not by any such ligaments, but by being folded around the lateral horn of the aponeurosis of the levator, which lies in front of it, and by the support afforded to it by the mass of orbital fat behind. The gland is crossed in front and deeply grooved by the lateral horn of the aponeurosis of the levator palpebrae superioris muscle, round which it is folded; so deep is the groove that the gland is almost divided into two parts or lobes, superior (orbital) and inferior (palpebral). Whitnall has seen no instance of entire separation of the two parts of the gland and considers the term "lobe" preferable to the designation of superior and inferior lacrimal glands seen in many textbooks.

Ptosis adiposa, according to Fuchs,[40] "is the name applied to relaxation of the skin of the lid which occurs in younger people and develops because the protective fold of the upper lid is of unusual size so that it hangs down over the free border of the lid into the region of

36. Duhamel, A.: Un cas de luxation spontanée des glandes lacrymales orbitaires; procédé de fixation dans la fossette lacrymale du frontal, Ann. d'ocul. **155**: 341, 1918.
37. Pritchard, E. L.: Non-traumatic Dislocation of Lacrimal Gland, Tr. Ophth. Soc. U. Kingdom **26**: 139, 1906.
38. Ascher, K. W.: Blepharochalasis mit Struma und Schleimhautduplikatur der Oberlippe, Klin. Monatsbl. f. Augenh. **65**: 86, 1919.
39. Whitnall, S. E.: Anatomy of the Human Orbit, London, Henry Frowde & Hodder & Stoughton, 1921.
40. Fuchs, Ernst: Diseases of the Eye, ed. 10, Philadelphia, J. B. Lippincott Company, 1933.

the palpebral fissure. The name was applied because it was earlier thought that this enlargement was due to an excessive accumulation of fat in the protective fold. The true cause is that the trains of fascia which unite the skin with the tendon of the levator and with the upper margin of the tarsus are not taut enough. As a result, the skin is not properly drawn up in the elevation of the lids but hangs down as a loose pouch.

"In blepharochalasis the skin of the upper lid has become so thin that it lies in innumerable folds and looks like crumpled tissue paper. It acquires a reddish appearance through the widening of numerous small superficial veins. As a result of its relaxation and loose structure it hangs down, pouch-like; the border of the lid does not itself lie lower."

The usual treatment advocated for dislocation of the lacrimal gland with its resulting cosmetic deformity due to the lid folds produced is to excise the gland (de Schweinitz [41]). The removal of the lacrimal gland is a dangerous procedure which may be complicated by profuse hemorrhage, and a large hematoma of the orbit may develop and even cause atrophy of the optic nerve (Gifford [42] and Curtin [43]). Golovin in his first case reported that he removed the right lacrimal gland and excessive skin fold. On the left side part of the gland was removed, and an attempt was made to replace the remainder in the fossa, a loop of silk suture being passed through the gland and brought out at the upper edge of the orbit. Golovin also removed the excess of elongated tarso-orbital fascia and cut off the excessive skin. Most of the Russian ophthalmologists extirpate the dislocated gland, although Sapir [13] performed Golovin's suture replacement operation on both sides. Duhamel [36] removed the left gland and attempted an elaborate replacement operation on the right side, passing the sutures through the gland and through two holes which had been made in the bony wall of the orbit. No detailed description of the technic of replacement has appeared in the American literature.

REPORT OF CASE

History.—John T., aged 21, referred by Dr. Shirley Sprague, first examined on Feb. 4, 1929, gave a history of recurrent drooping of the upper eyelid ever since an attack of whooping cough at the age of 8. Following acute rhinitis, the left eyelid became reddened and painful, the palpebral fissure became narrow and a purulent secretion exuded from the inflamed left conjunctiva. The last inflammatory attack occurred in March, 1928, following a laceration of the left upper lid and left side of the nose.

Examination.—At the first visit there was a corrected visual acuity of 20/20 in each eye. When the upper lids were compared, the right showed an overlapping fold of skin which did not encroach on the palpebral fissure, while the left showed a fold of skin large enough to cover the palpebral fissure everywhere, except nasally, producing an apparent narrowing thereof (fig. 1). The skin of each upper lid was of normal color and wrinkled, as in ptosis adiposa. Raising of the eyelids readily exposed the palpebral lobe of the right lacrimal gland and the palpebral and orbital lobes of the left lacrimal gland (fig. 2). The left lacrimal gland could easily be palpated through the redundant skin.

The urinalysis, the blood chemistry, the Wassermann reaction in the blood, the differential blood count and the basal metabolism were normal. There was a marked hypertrophy of the labial mucous membranes and of the submucous tissue of the mouth, from lips to gingivae. The roentgenogram showed an absence of frontal sinuses, and shallow orbital roofs, even more shallow than is usually found with absent frontal sinuses.

On February 21, the left upper lid became acutely inflamed, and the patient had considerable pain over the region of the left lacrimal gland. The tissues of the lid were swollen and tense, closing the temporal half of the palpebral fissure, and there was chemosis of the bulbar conjunctiva temporally and superiorly. Both lobes of the lacrimal gland were tender on palpation, and greenish-yellow pus exuded from the gland at the junction of the two lobes. After the application of hot compresses, 3 cc. of pus was easily expressed from the gland, after which the patient had relief from all symptoms within forty-eight hours. Weekly smears from the conjunctival sac, taken for one month after this attack, yielded neither pus cells nor bacteria.

The diagnosis of this case by Dr. Arnold Knapp was blepharochalasis with prolapse of the left orbital gland. He recommended that a roentgenogram of the left orbit be taken for possible malformation.

Dr. Martin Cohen's diagnosis was congenital dislocation of the accessory lacrimal glands and that the local lesion followed hypertrophy of the lacrimal gland on the left side.

Dr. Walter B. Weidler considered this case prolapse of the lacrimal glands especially marked on the left side and recommended extirpation with removal of the excessive tissue in the lids. In his opinion the drooping of the eyelid did not extend across the entire width of the border of the lid as seen in blepharochalasis, and there were no degenerative changes in the skin as noted in his series of cases of blepharochalasis.

The following operations, performed with the assistance of Dr. Martin Cohen, produced the satisfactory result seen in figure 3.

Technic.—The patient was admitted to the Post-Graduate Hospital on June 13, 1929, for operation on the left gland, general anesthesia being used. A skin incision was made 3 mm. below the eyebrow line in the outer third of the upper eyelid to avoid the levator palpebrae superioris muscle, and extended in a curved direction temporally and inferiorly toward the outer canthus. The edges of the skin were freed and the tarso-orbital fascia (septum orbitale) exposed by guarded dissection. When this fascia was split transversely, the orbital lobe of the lacrimal gland was exposed and found to be situated about 4 mm. inferior to the lacrimal fossa. The palpebral lobe of the gland was next exposed by extending the incision in the fascia temporally. Only the temporal portion of the palpebral lobe was freed, as dissection at the nasal edge would have damaged some fibers of the levator sheath. Exposure of the lacrimal gland inferiorly was easily effected, excepting at one portion contiguous with the fornix conjunctivae. (At this stage of the operation the gland was examined and found to be uniformly hypertrophied and measured about 15 mm. transversely at the upper level of the orbital lobe and 10 mm. in the anteroposterior diameter. The vertical measurement from the superior level of the orbital lobe to the conjunctival aspect of the palpebral lobe was about 20 mm.). In an attempt to free the inferior aspect of the palpebral lobe, a buttonhole was made into the conjunctiva and further dissection in this direction was discontinued. The prolapse of the palpebral lobe of the gland appeared more marked than the prolapse of the orbital lobe.

The orbital lobe could be replaced into the lacrimal fossa by traction exerted on the palpebral lobe superiorly and temporally. Two double-armed silk sutures were then passed through the posterior inferior surface of the palpebral lobe, one directed superiorly and the second superiorly and laterally beneath the tarso-orbital fascia and the periosteum of the frontal bone. These sutures were brought out through skin above the eyebrow and tied over small cotton balls, the object of this procedure being to permit further tightening of the sutures postoperatively if the dislocation had not been fully corrected. The operative wound was then flushed with warm solution of corrosive mercuric chloride, 1:5,000. A chromic catgut suture was passed through the inferior edge of the incision in the tarso-orbital fascia. The superior edge of the fascia was next included, and the suture was passed over the lacrimal fossa and through the periosteum of the frontal

41. de Schweinitz, George: Diseases of the Eye, ed. 9, Philadelphia, W. B. Saunders Company, 1921.
42. Gifford, H.: Extirpation of the Lacrimal Gland Causing Atrophy of Optic Nerve, Am. J. Ophth. **6**: 268, 1889.
43. Curtin, T. H.: Personal communication to author.

bone. A second catgut suture closely approximated the edges of the fascia nasally. The object of these sutures was to reinforce the support of the displaced gland and to repair the rent in the tarso-orbital fascia. The skin incision was closed by three interrupted silk sutures. The edges of the skin were iodinized and a firm monocular bandage applied.

Apart from extensive subconjunctival hemorrhage and traumatic edema of the lid, there were no postoperative complications, and on first inspection of the conjunctival fornix three days postoperatively the palpebral lobe of the lacrimal gland could no longer be seen. On the fifth day the skin sutures were removed. The superolateral double-armed silk suture which was passed from the lacrimal gland beneath the periosteum of the frontal bone was removed on the ninth day. On July 3, the cotton ball beneath the second double-armed suture was removed and there was no retraction of the excessive silk suture to indicate that the lacrimal gland could now prolapse. On July 6 (twenty-six days postoperatively) the suture had sunk to the level of the eyebrow and was removed as no gland was to be seen in the fornix conjunctivae. The object of the operation was merely to attempt replacement of the lacrimal gland into its normal fossa. No attempt was made to relieve the sagging loose skin tissue of the upper lid. Several months after the successful replacement of the lacrimal gland, considerable retraction of the loose areolar tissue was noted, the palpebral fissure became wider, the pupillary area of the cornea was no longer encroached on by the overhanging folds of skin and the cilia of the upper lid, which were entirely covered preoperatively, were easily seen (fig. 4). It was apparent, however, that the excessive lid tissue would have to be removed to achieve a better cosmetic result.

An interesting observation on the part of the patient was that his subsequent attacks of acute rhinitis were not complicated by left-sided dacryo-adenitis. The exposed position of the prolapsed palpebral lobe in the conjunctival fornix probably accounted for the repeated inflammations due to infection ascending from the nose.

The right gland was operated on, Oct. 10, 1929, by the same technic, local anesthesia being used. Several points of difference are worthy of consideration. The skin incision measured 16 mm. and was placed 5 mm. below the eyebrow. On exposure of the tarso-orbital fascia only a minimal amount of hemorrhage was noted as compared with the bleeding encountered on the left side. The conjunctival aspect of the palpebral lobe was exposed with great difficulty, as this lobe of the gland appeared more adherent to the surrounding tissue than the left palpebral lobe. The orbital lobe measured 14 mm. in the transverse diameter and 10 mm. in the anterior posterior diameter. Whereas a double-armed suture passed from the posterior inferior aspect of the palpebral lobe on the left side readily replaced the orbital gland into the lacrimal fossa, a similar maneuver on the right side only produced eversion of the orbital lobe, causing it to be displaced farther from its normal anatomic situation. A double-armed silk suture was passed through the medial third of the anterior aspect of the orbital lobe and continued superiorly and temporally over the lacrimal fossa and beneath the periosteum of the frontal bone and brought out just above the eyebrow. A second double-armed suture, including the outer third of the anterior aspect, was passed in a similar manner.

On April 29, 1930, the excessive skin of the left upper lid was removed, procaine hydrochloride infiltration anesthesia being used. The patient was operated on in the sitting posture in order the better to gage the degree of drooping. The wound was closed with eleven interrupted silk sutures.

Pathologic Report (Dr. Louise H. Meeker).—The tissue from the eyelid was examined. The specimen measured 30 by 14 by 2 mm. and was composed of thin wrinkled skin without special markings.

Microscopic examination of the sections showed a covering of dermal epithelium, typical of the eyelid. This rested on edematous fibrous tissue that contained many dilated blood vessels. There were extravasations of blood outside the blood vessels. The sebaceous glands related to the epithelium were of unusually large size. There was a mild inflammatory reaction as evidenced by collections of lymphocytes and plasma cells around the blood vessels and sebaceous gland ducts.

Diagnosis of chronic inflammation with passive congestion and edema was made.

SUMMARY

1. Spontaneous dislocation of the lacrimal glands is a separate disease entity and is often erroneously considered as a complication of blepharochalasis and occasionally with ptosis adiposa.

2. The disease is seen commonly in Russian patients and is probably of more frequent occurrence in this country than indicated in American textbooks and literature.

3. Extirpation of dislocated lacrimal glands is a hazardous operation which should be replaced by the safer and simpler procedure of returning the gland into the lacrimal fossa.

4. If performed early in life, the operation would prevent the formation of overhanging folds of skin in the upper lids.

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ABSTRACT OF DISCUSSION

DR. F. HERBERT HAESSLER, Milwaukee: It does not take an extensive search of the literature to discover that the confusion concerning the names of clinical entities and nosologic complexes is tremendous. When the contents of the literature are boiled down, it is seen that three tissues are involved in the discussion—the skin of the lid, the orbital fascia and the orbital contents. The points of difference concern chiefly the tissue in which the lesion has its origin. Some assume that the tear glands themselves become less firmly anchored, which weakens the orbital fascia and stretches the skin. Any number of combinations are possible, and most authors have evolved a theory of their own on the basis of one or two cases. If I understand, Dr. Smith assumes that in his cases the seat of the lesion was probably the palpebral-orbital fascia, which allowed the gland to prolapse, with secondary changes in the gland and in the skin. This assumption is somewhat comparable to what happens in inguinal hernia. There also are some holding structures, which finally give way under pressure from within. I do not think one has to assume mystical relation between skin and fascia and orbital contents, when a familiar mechanism can completely explain the condition. Dr. Smith's operation seems to be successful; at least the pictures showed that he had accomplished what he had attempted. He assures me that operation is not very difficult to perform, so that even allowing for modesty on his part, I think we should all try it. The fact that extirpation of the tear gland is a dangerous procedure has not been sufficiently emphasized in the literature.

DR. EDWARD JACKSON, Denver: The term applied to the condition is often of doubtful propriety. The cases that I have seen have all been mislocation or anomalies of location in the gland. The orbital gland was not in the orbit but partly in the lid, entirely independent of enlargement. The condition was a developmental anomaly. I watched my patient carefully for twenty years. Two of his sisters exhibited a lesser degree of the same condition. In none of my cases were there any symptoms that brought the patient to seek relief. They were conditions noticed when the eyes were examined for other reasons. It has never occurred to me to do anything for any of these patients. I have certainly seen five, and probably more, cases that should be put in this class. I have seen traumatic dislocation of the glands and have seen enlargement of the palpebral portion, which I have removed; but in those cases the palpebral gland was entirely separate from the orbital gland.

DR. VERNON A. CHAPMAN, Milwaukee: I wish to call attention to a cause of confusion arising in describing certain lacrimal cases. This confusion is caused by the use of the term "lacrimal fossa." Unfortunately, there are two separate fossae to each of which the term "lacrimal fossa" is applied. These fossae are the fossa glandulae lachrymalis and the fossa sacci lachrymalis, the fossa of the lacrimal gland and the fossa of the lacrimal sac, in obviously two quite different anatomic

locations. As the lacrimal gland does not begin the function of secretion of tears before the second to seventh week after birth, and the infant's eyes get along very well without it, there is reason to believe that compensation for its loss later in life may be established without great danger to the eyes. If operation for replacement is to be done, prolapse of the lacrimal gland should be differentiated particularly from dacryops, or cyst of the lacrimal gland, and from tumors, which may range in size from that of a pea to a pigeon's egg and are usually not inflammatory in character.

DR. JAMES W. SMITH, New York: I was interested in Dr. Jackson's statement that he had seen two patients in the same family who exhibited a tendency toward lacrimal gland dislocation. The prominent orbital roofs evident in my patient were also present in his father and his paternal aunt, both of whom were operated on by me for glaucoma. I was informed that prominent orbital roofs were also present in the patient's paternal grandfather. Many cases of lacrimal gland dislocation are discovered accidentally in routine clinical examinations of patients who come for treatment of other eye conditions. My patient's chief complaint was repeated attacks of left-sided dacryo-adenitis rather than the cosmetic deformity produced by the overhanging skin folds of the eyelids. Dr. Chapman's point emphasizes the necessity of accurate preoperative diagnosis. In my paper I mentioned the two cases of Van Heuven in which a dermoid cyst and a lipodermoid growth were removed but which on pathologic examination were found to be dislocated lacrimal glands.

CHOLECYSTITIS

STUDY BASED ON FOLLOW-UP AFTER FROM FIVE TO FIFTEEN YEARS OF TWO HUNDRED PATIENTS NOT OPERATED ON

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AND
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Disease of the gallbladder is diagnosed in our clinic more often than any other chronic intra-abdominal lesion. Twelve years ago we [1] reported that gallbladder disease was found twice as frequently as peptic ulcer and gastric cancer combined and that it was the most common organic cause of dyspepsia. Nearly 6 per cent of all our patients over 20 years of age are diagnosed as having gallbladder disease. Yet pathologic studies show that ten times this percentage, or 60 per cent of adults, show cholecystopathies at routine autopsies.

CHOLECYSTOPATHY AT AUTOPSY

Autopsies recently performed (table 1) to study the gallbladder carefully have shown that cholecystitis and cholesterosis are the most common cholecystopathies, with stones frequently present. Stewart [2] of Leeds reports a 16.4 per cent incidence of gallstones in 6,000 autopsies. Crump,[3] recently working in Vienna, reports a 32.5 per cent incidence of gallstones and 60 per cent incidence of cholecystopathy in 1,000 routine autopsies. Mentzer [4] reports 21.6 per cent of gallstones and a 66 per cent incidence of cholecystopathy in 612 routine autopsies. Crump [3] reports the presence of stones in the bile ducts of one fourth of all cases presenting gallstones. Mentzer [4] states that only 15 per cent of his cholecystopathies found at necropsy had given clinical evidence of gallbladder disease.

Routine autopsies (table 2) show that, in each decade past the age of 30, cholecystopathy is present in more than half of all subjects, and gallstones are present in more than one fifth. With these facts we must believe that more than half of adults past 30 years of age have abnormal gallbladders and that approximately one fifth have gallstones. One fifth of this audience must have gallstones, yet very few have had gallbladder symptoms.

CLINICAL CHOLECYSTOPATHY

Clinical observations must be based on patients in whom disease or dysfunction of the gallbladder has given rise to symptoms; such observations cannot include the far larger group of individuals in whom the abnormal gallbladder has given rise to no recognizable clinical symptoms. Clinical cholecystitis includes, then, only those cases in which dysfunction or disease of the gallbladder is responsible for symptoms, usually but not always due to demonstrable organic gallbladder disease. The conditions found at operation do not always parallel the clinical observations. In certain cases, removal of an apparently normal gallbladder has cured biliary colic; in others, removal of a gallbladder full of stones has failed to relieve the patient's symptoms. Every surgeon has seen violent biliary colic spontaneously subside and the patient do remarkably well for many years.

Surgical studies since the beginning of this century have taught most that is known about clinical cholecystitis. Cholecystostomy and, later, cholecystectomy have been done on many thousands, and numerous follow-up studies have been made. Usually such studies have shown from 60 to 85 per cent of satisfactory results from the patient's standpoint; 83 per cent of satisfactory results have recently been shown in our own surgical follow-up. Many observers tell us that, the more typical the symptoms, the surer the relief following cholecystectomy.

Every surgeon occasionally sees advanced gallbladder disease at operation which was unsuspected clinically; conversely, he is frequently uncertain whether or not the exposed gallbladder is actually diseased. He undoubtedly frequently fails to detect small gallstones and gallbladder sand in the tense gallbladder seen in the fasting patient at operation. Recently we have given a glycerin emulsion of egg yolk and lecithin by mouth as a routine shortly before anesthesia (as suggested to replace the fat meal given for emptying the gallbladder in doing cholecystographic work). We have thus greatly facilitated surgical palpation of the gallbladder by having it half empty and have found the intestine collapsed almost as much as with spinal anesthesia.

Surgical pathologists have done much to show how common cholecystopathy really is—in fact, it is unusual for the surgical pathologist to report a normal gallbladder. Stones are found in approximately 40 per cent of surgically removed gallbladders in our clinic.

The past decade has added a wealth of knowledge concerning the liver and gallbladder. Studies in physiology, pathologic anatomy and roentgenology have afforded a better understanding than ever before of the intricacies of disease of these organs. Graham has summarized most of this knowledge in his recent book on the gallbladder.

From the Mason Clinic.

Read before the Section on Practice of Medicine at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Blackford, J. M.: Gastric Symptoms, J. A. M. A. **77**: 1410 (Oct. 29) 1921.
2. Stewart, M. J.: Lancet **2**: 617 (Sept. 19) 1931.
3. Crump, Curtis: Surg., Gynec. & Obst. **53**: 447-455 (Oct.) 1931.
4. Mentzer, S. H.: Surg., Gynec. & Obst. **42**: 782 (June) 1926.

Surgical and pathologic studies have been very complete; and satisfactory late operative results have been frequently reported. Yet we are sure that the present ability to diagnose by history and objective examination a larger fraction of all diseased gallbladder calls for a note of conservatism in treatment—for surely not 6 per cent or more of all adult patients need gallbladder operations. Pathologists find that 60 per cent of adults are cholecystopathic and that all cholecystopathies have more or less hepatitis; but they speak in pathologic, not clinical, language. Surgeons are inclined to believe that cholecystopathic individuals, particularly those with gallstones, require cholecystectomy for relief. Surgical conclusions are based on cases having serious clinical symptoms. Internists are divided among themselves; some feel that there is no satisfactory medical treatment of cholecystopathic patients; others have found that cholecystopathic patients can be persuaded to continue medical treatment almost indefinitely, whether relieved or not, and with little risk of developing critical complications.

TABLE 1.—*Recent Routine Autopsy Studies: Cholecystopathy, Gallstones and Cancer*

Author	Routine Autopsy Percentages			
	Gallstones	Cholecystopathy	Carcinoma	Gallstones with Carcinoma
Stewart: 6,284 cases	16.4	..	0.7	4
Crump: 1,000 cases	32.5*	60	2.4	7
Mentzer: 612 cases	21.6	66†	1.6	9

* Two hundred and fifty-seven gallstone cases show biliary duct stones.
† One hundred and fifty-seven of these cases show clinical symptoms.

Such apparent confusion exists because not all are thinking in terms of relief of symptoms, present and future. Some diseased gallbladders make a great clinical disturbance; others make less dramatic manifestations; but far more cholecystopathies cause no recognizable clinical disturbance and hence go untreated.

Medical follow-up studies after years of clinical symptoms of gallbladder disease have rarely been made.

TABLE 2.—*Recent Routine Autopsy Studies: Cholecystopathy, Gallstones*

Number of Cases		Ages by Decades	Percentages			
			Cholecystopathy		Gallstones	
Mentzer	Crump		Mentzer	Crump	Mentzer	Crump
65	38	0 - 20	1	30	0	0
21	91	21 - 30	33	45	5	9
68	92	**31 - 40**	**73**	**38**	**15**	**9**
106	120	**41 - 50**	**68**	**56**	**14**	**24**
128	144	**51 - 60**	**70**	**60**	**21**	**25**
147	257	**61 - 70**	**70**	**67**	**22**	**41**
73	202	71 - 80	71	73	34	52
6	56	81+	83	66	33	54
614	1,000	.....	66	60	20	32

There is no yardstick by which to measure the success of palliative treatment or to give the percentage of patients who do well without operation. This fact must be remembered in evaluating any method of medical or of surgical treatment.

Is there such a thing as medical treatment? Graham, in his book on the gallbladder, devotes only the last page to this subject, to say essentially that the treatment of cholecystitis is always surgical.

Training in surgical diagnosis led us to the opinion that the diagnosis of clinical cholecystitis usually indicated operation—yet for years immediate operation has not been advised in milder cases, and frequently operation has been advised but refused by the patient. This has given us a considerable series of cases of clinical cholecystitis in which medical treatment has been advised or in which surgical treatment has been refused and hence medical advice has been given. We have been surprised at the infrequency with which delay has resulted in emergency operation or disaster.

MEDICAL CHOLECYSTITIS WITH FOLLOW-UP

Five hundred case histories of unoperated cholecystitis have been reviewed for this study. Those showing local complications, such as cystic or common duct obstruction, cholangeitis, pancreatitis, cholecystic empyema or associated gastric pathologic changes, have been excluded; likewise, cases in which operation was performed within six months of the time of examination.

Such exclusions left a considerable number of cases of chronic gallbladder disease for study. These were divided into four groups:

1. Indefinite symptoms attributed to cholecystitis.
2. Probable cholecystitis giving dyspepsia, without colic or with atypical colic.
3. Typical gallbladder colic or typical gallbladder dyspepsia or both.

TABLE 3.—*Average Ages of Two Hundred Patients Who Tried Medical Management of Cholecystitis* **

Group	Onset	Examination	Present
85 probable	35.2	45.1	53.7
59 typical	32.5	42.2	50.1
26 proved	37.1	48.1	56.5
170 living	34.4	43.3	52.8
30 dead	45.7	60.3	Lived 4 yrs.

* Clinical history of trouble, average nine years; average of follow-up study, nine and one-half years; duration of cases to present, eighteen and one-half years.

4. Gallbladder disease proved by roentgen demonstration of stones, or stones found at operation for other troubles or a history of colic followed by jaundice, or a positive cholecystogram.

We have discarded group 1 in this study because of uncertainty of diagnosis, leaving groups 2, 3 and 4, which may be designated as probable, typical and proved gallbladder disease; all cases suitable in our judgment for elective gallbladder surgery.

Two hundred cases in which medical treatment was elected or advised have been successfully followed after from five to fifteen years. This represents a 60 per cent successful follow-up of probable, typical and proved gallbladder disease cases available for study after an average of nine and a half years (table 3). The average length of history was nine years, so the total average duration from the onset of symptoms to the present is eighteen and one-half years. All available methods of follow-up study have been used; we have found it vastly more difficult to follow up medical than surgical cases. Diagnosis is assumed to be approximately 90 per cent correct, for these cases were studied by a group of careful clinicians, using all usual methods of studying gastro-intestinal disorders. Most of these cases were studied before cholecystograms came into use, but late in the series this method was employed. Immediate surgery was advised but refused in one third of these cases. A trial of medical treatment was suggested in two thirds, with the understanding that surgery was advisable later if relief was not obtained promptly by medical treatment.

The average age was 43.3 years. More than two thirds of the patients were women. A history of biliary colic (table 4) was obtained in half of the cases in which operation was not subsequently done; in only two fifths of those with a history of colic was a continuation of colic since examination reported. Jaundice has been noted since diagnosis in 8 per cent of all cases. The chief complaint of more than half of the patients was dyspepsia rather than pain.

TABLE 4.—*Colic and Jaundice in One Hundred and Twenty-Seven Cases of Cholecystitis in Which Operation Was Not Performed, After Nine and One-Half Years*

	History of	Follow-Up	
	Colic 50%	Colic 20%	Jaundice 8%
71 probable	25	13	6
42 typical	29	10	4
14 proved	11	0	1
127 totals	65	26	10

Gastric analysis (table 5) by the Ewald-Boas meal was done in 134 instances. Anacidity or subacidity was the rule; normal acids were frequently present, and high acids (above 40 free hydrochloric acid) were unusual.

MEDICAL TREATMENT

The patient with gallbladder dyspepsia has usually found that certain rich and tasty foods disagree, that overloading the stomach brings on trouble, and that high seasonings, fried foods and alcohol are often distressing. Automatically, he tries to avoid the things that make trouble. By medical management we mean the use of a diet list with general instructions and elimination of foods that usually disagree with such patients. We have advised periods of the use of a morning saline solution, usually sodium phosphate, and biliary salts before meals, with relief of constipation. Alkalis have occasionally been used. Infective foci have usually been relieved, and we have laid emphasis on reasonable physical exercise. Medical biliary drainage (Lyons-Meltzer) has not been used for treatment.

TABLE 5.—*Total Free Acids in One Hundred and Thirty-Four Cases of Medical Cholecystitis; Ewald-Boas Meal*

	Free Acid			
	0 Absent 23%	1-20 Low 34%	21-40 Average 34%	40+ High 8%
Probable	18	24	25	5
Typical	10	12	19	4
Proved	3	10	2	2
Total	31	46	46	11

Such a regimen has been instituted in all cases but has been followed only as the patients cared to follow it. Treatment has not been closely supervised.

The results of the total study can be briefly stated. Two hundred cases (table 6) show that 37 per cent of the patients are relieved completely or sufficiently to be satisfied with their present status. Fifteen per cent are dead, but, of the thirty patients dead, only two died from gallbladder disease, one following operation for a ruptured gangrenous gallbladder and the other following operation for acute pancreatitis; twenty-eight patients died at an average age of 64 from other causes, chiefly diseases of the heart or kidneys, apoplexy and cancer; they were not operated on for gallbladder disease. (Surgeons usually figure end-results in percentages of those still living, so we may state that 42 per cent of the patients still living were relieved after medical advice.)

Surgical treatment has been sought by approximately 21 per cent of the patients, and 27 per cent more should have had it because they were not relieved by general advice. Of forty-three patients who have been operated on at our clinic or elsewhere, three fourths state that they are well satisfied with the surgical results. Operation was advised in two thirds of the cases in which operation was later done, compared to such advice to one third only of the total series.

COMMENT

This study has confirmed our impression, contrary to surgical literature, that cholecystitis may frequently be successfully treated (table 7) along medical lines. The risk of developing a surgical emergency or calamity while under medical treatment is not great; in fact, it is less than the risk of the best elective gallbladder surgery. It should be recognized that the disease is very chronic and has caused symptoms for an average of nearly ten years before the patient is seen in the examining room. Doubtless earlier advice would give far better results from medical treatment.

TABLE 6.—*Status After Nine and One-Half Years in Two Hundred Cases of Medical Cholecystitis*

	Medical		Operative		
	Good 37%	Bad 27%	21%	Per Cent of Living	Dead 15%
Probable	39	32	14	16	12
Typical	26	16	17	30	12
Proved	8	6	12	40	6
Total	73	54	43	33	30

We believe emphatically that, when medical management fails to relieve promptly, surgery should be urged, for the large majority of medical failures may be thus relieved and complications avoided. Complications such as obstructive jaundice, empyema or rupture of the gallbladder multiply the surgical risk by from five to ten times and may cause irreparable hepatic damage even if the patient survives operation.

TABLE 7.—*Indigestion in One Hundred and Twenty-Seven Cases of Cholecystitis in Which Operation Was Not Performed, After Nine and One-Half Years*

	Much Improved 53%	Better 28%	No Better 18%	Worse 1%
Probable	37	21	12	1
Typical	19	13	9	0
Proved	10	1	1	0
Total	66	35	22	1

The development of a malignant gallbladder disease from delay is a definite risk, but it must be relatively small. Autopsy statistics show that 60 per cent of all adults are cholecystopathic, but that a malignant condition in the gallbladder develops in only about 2 per cent (table 8). Patients having carcinoma of the gall-

bladder are usually past the age of 60 and almost always have gallstones.

Careful clinical study of the patient is still the best method of study. The x-rays and the clinical laboratory are indispensable adjuncts; they will frequently confirm and occasionally make the diagnosis. They cannot size up the case or advise the patient. This must be done after painstaking clinical study, with consideration of the patient from all angles, rather than entirely from the objective standpoint.

TABLE 8.—*Recent Routine Autopsy Studies: Cancer of Gallbladder*

	Number of Cases			
			Cancer	
Ages by Decades	Mentzer	Crump	Mentzer	Crump
0 - 20	65	38		
21 - 30	21	91		
31 - 40	68	92	1	
41 - 50	106	120	2	1
51 - 60	128	144	2	4
61 - 70	147	257	8	3
71 - 80	73	202	1	12
81+	6	56	..	6
	614	1,000	14	28

Such clinical study will make less frequent the error, followed by poor results, of removing the gallbladder, even though it has stones, in attempting to cure mucous colitis, renal calculi or pyelitis, functional dyspepsia associated with enteroptosis, nervous breakdowns with irritable bowel, root pains of arthritis or tabes, migraine, constipation neuroses and the like.

CONCLUSIONS

1. Thirty-seven per cent of chronic cholecystitis patients have had satisfactory relief over an average of more than eight years without operation.

2. Forty-eight per cent of patients with chronic cholecystitis who were not operated on have either come to operation later or should have been operated on later on account of continuation of symptoms.

3. Fifteen per cent of patients are dead, but only 1 per cent died directly from gallbladder disease.

4. The patient with uncomplicated cholecystitis should be given a trial on medical treatment. If not markedly relieved promptly, he should be operated on.

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ABSTRACT OF DISCUSSION

DR. FRANK SMITHIES, Chicago: The authors emphasized that distinction must be made between pathologic examinations showing proof of gallbladder disease and the clinical symptoms supposedly due to gallbladder disease. Twenty-three per cent of patients in middle life who have had "biliary tract disease" for as long as five years have no hydrochloric acid secretion. If they have been ill ten years they not only secrete no hydrochloric acid but they have definitely provable disturbances in the function of the liver. In this widespread "biliary tract syndrome" the pancreas also is injured, with regard not only to its digestive capacity but also in respect to its internal secretion. Eight per cent of my patients of the group being considered exhibited intermittent or constant glycosuria. While the authors' 37 per cent report themselves as being reasonably satisfied with their progress, it is likely that in many instances should the individual's digestive function and physical condition be closely scrutinized, he will admit or exhibit dyspepsia or altered physiologic function of some grade. When "gallbladder" patients remain not operated on the chief reason they remain in relative comfort and safety is that they possess fairly good drainage from the hepatic or even the cystic ducts, and in patients with calculi the stones do not wander. Only briefly can be mentioned one of the common but not sufficiently emphasized effects of lack of drainage in biliary tract patients; namely, hypertension. When liver drainage is attained, whether by operation or by the duodenal tube, many patients will experience not only a transient but often a permanent reduction in blood pressure. I suggest that, in hypertension patients on whom gallbladder operations are performed, cholecystostomy be done instead of cholecystectomy, and that long-continued liver drainage be the objective.

DR. JAMES F. WEIR, Rochester, Minn.: The treatment that the authors have instituted in this series of cases of cholecystitis may be considered palliative. Surgical therapy is generally conceded to be the only cure for well developed disease of the gallbladder. It is undertaken to relieve pain and dyspepsia. To a lesser extent operation may be considered prophylactic: namely, to avoid complications of an inflammatory or malignant nature and occasionally to eradicate a focus of infection. For various reasons, many cases do not come to operation. The value of the authors' presentation lies in their follow-up of those cases in which operation has not been undertaken. Such information may be common knowledge, but there are few if any such data in the literature. Dr. Blackford states that such a follow-up is more difficult than that of surgical cases, yet he is able to present successful responses in 60 per cent. Many may object to the accuracy of the data compiled or the significance of any conclusions drawn. Figures may not be the final criteria, but the general theme of his results cannot be ignored and represents the result of a form of investigation of definite clinical value. At the Mayo Clinic many of the late painful sequelae and other unsatisfactory states after operation occur most commonly in cases in which operation is performed late. In some European countries the internists are slow in referring such patients for operation, and consequently the disease is generally more advanced than in this country. Patients are seen who are free of symptoms, and yet at exploration a surprising degree of disease is observed, such as subacute cholecystitis. Thus, caution must be exercised and such patients should have treatment which will give them relief and save them from the late disastrous results of disease of the biliary tract. Although at least a third of the group were progressing satisfactorily over an average of nine and a half years, 50 per cent of the authors' patients had or should have been operated on. In cases in which there is a tendency for the development of complications which operation seeks to avoid, there is usually ample warning such as progressive pain and dyspepsia, and the proper treatment should be instituted. However, the results of the authors' study at least offer justification for considerable conservatism in the treatment of many of the cases of unsuspected cholecystitis diagnosed on the basis of cholecystography.

DR. J. M. BLACKFORD, Seattle: Dr. Smithies is correct in stating that a considerable fraction of these patients have either absent acids or low acids. There are so few hyperacidities that one almost hesitates to make the diagnosis of gallbladder disease in face of high acids, in this series about 8 per cent of all. The difficulty of following up medical cases is considerable after the lapse of time such as this study has been based on. The matter of the hypertensive heart raises the question of the gallbladder as a focus of infection. I have tried to find some evidence that these patients had a hard time on account of harboring a focus of infection but I was not able to do so. Dr. Weir mentions the surgical side with some emphasis. I hope no one will feel that I do not believe in gallbladder surgery. However, these autopsy figures have brought out a fact that I think surgeons do not fully appreciate. Approximately 20 per cent of adults are found to have gallstones in the gallbladder in routine consecutive autopsies. Approximately two thirds of these patients are women. I think all will agree that at least double or possibly two and one-half times the number who carry gallstones have definitely diseased gallbladders. If we allow for difference in sex we will have to suppose that in this audience somewhere near 10 per cent have gallstones now, and I doubt if the accidental finding of gallstones without serious symptoms should lead 1 or 10 per cent of us to surgery at the present time.

ESTIMATION OF CARDIAC AREA IN CHILDREN

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Many years ago Bardeen introduced in this country a technic for measuring the size of the heart by means of long-distance roentgenograms. Four points are involved:

1. A knowledge of the approximate amount of triangular distortion remaining even for distances of 2 meters or greater. This is usually less than 5 per cent.
2. A method of drawing in, more or less arbitrarily, the upper and lower borders, thus completing the outline of an area bounded on either side by the edges of the heart silhouetted against air-containing lung.
3. Adaptation of a simple engineering instrument for the measurement of the area thus outlined.
4. The establishment of tables showing the normal range of the relationship between this area and certain body measurements in normal subjects.

Nine years ago one of us, working with Eyster at the University of Wisconsin, amplified Bardeen's tables of the normal size of the heart of adults by developing a formula for the prediction of the cardiac area from measurements of the height and weight.

$$\overline{F} = 0.87\ H + 0.34\ W - 63.8$$

Since then we have made routine clinical use of this formula and of tables based on it, and Eyster, after applying it to independent groups of normal subjects, has been able to demonstrate that it fits the independent normals about as well as the originals. Furthermore, it is satisfactory in distinguishing between normal groups and groups of subjects suffering from heart disease.

This formula, which we refer to as the "adult formula," is not satisfactory for children, but until now we have lacked the opportunity to study an adequate group of normal children and construct a new "child formula." The present report is concerned with the results of such a study on a group of 169 children ranging from 2.9 years to 18.8 years of age. These children live at the Mooseheart City of Childhood, an institution operated by the Loyal Order of Moose. We have been able to study them because of the cooperation of the officials of that order and particularly of Dr. M. L. Reymert, director of the Mooseheart Laboratory for Child Research.

Approximately a dozen different formulas were developed. Some covered the entire group: one using sitting height, age and weight; another, sitting height and weight; another, standing height and weight. It was found, however, that the correlation between stature and sitting height was so high (0.966) that there was no advantage in using both, and since the measurement of standing height requires less special equipment that measurement was considered preferable to sitting height. The inclusion of age in the equation improved the prediction slightly but the gain was too little to offset the disadvantages of the rather unwieldy tables that would be necessary if this extra variable was used. Independent formulas for boys alone were slightly more accurate than those for the entire group, but here, too, the slight advantage did not seem to justify the inconveniences involved.

On the other hand, in spite of the fact that the correlation between height and weight is high (0.935), we became convinced that height should be retained in the formula because the errors introduced when it is omitted tend to accumulate in the more obese subjects. Its retention probably makes for more universal applicability of the formula.

*Table for Predicting the Cardiac Area of a Child from the Height and Weight**

Height, Cm.	0.180 H + 13.7 Sq. Cm.	Weight, Kg.	1.045 W Sq. Cm.	Height, Cm.	0.180 H + 13.7 Sq. Cm.	Weight, Kg.	1.045 W Sq. Cm.
81	28.3	12.0	12.5	140	38.9	41.5	43.4
82	28.5	12.5	13.1	141	39.1	42.0	43.9
83	28.6	13.0	13.6	142	39.3	42.5	44.4
84	28.8	13.5	14.1	143	39.4	43.0	44.9
85	29.0	14.0	14.6	144	39.6	43.5	45.5
86	29.2	14.5	15.2	145	39.8	44.0	46.0
87	29.4	15.0	15.7	146	40.0	44.5	46.5
88	29.5	15.5	16.2	147	40.2	45.0	47.0
89	29.7	16.0	16.7	148	40.3	45.5	47.5
90	29.9	16.5	17.2	149	40.5	46.0	48.1
91	30.1	17.0	17.8	150	40.7	46.5	48.6
92	30.3	17.5	18.3	151	40.9	47.0	49.1
93	30.4	18.0	18.8	152	41.1	47.5	49.6
94	30.6	18.5	19.3	153	41.2	48.0	50.2
95	30.8	19.0	19.9	154	41.4	48.5	50.7
96	31.0	19.5	20.4	155	41.6	49.0	51.2
97	31.2	20.0	20.9	156	41.8	49.5	51.7
98	31.3	20.5	21.4	157	42.0	50.0	52.3
99	31.5	21.0	21.9	158	42.1	50.5	52.8
100	31.7	21.5	22.5	159	42.3	51.0	53.3
101	31.9	22.0	23.0	160	42.5	51.5	53.8
102	32.1	22.5	23.5	161	42.7	52.0	54.3
103	32.2	23.0	24.0	162	42.9	52.5	54.9
104	32.4	23.5	24.6	163	43.0	53.0	55.4
105	32.6	24.0	25.1	164	43.2	53.5	55.9
106	32.8	24.5	25.6	165	43.4	54.0	56.4
107	33.0	25.0	26.1	166	43.6	54.5	57.0
108	33.1	25.5	26.6	167	43.8	55.0	57.5
109	33.3	26.0	27.2	168	43.9	55.5	58.0
110	33.5	26.5	27.7	169	44.1	56.0	58.5
111	33.7	27.0	28.2	170	44.3	56.5	59.0
112	33.9	27.5	28.7	171	44.5	57.0	59.6
113	34.0	28.0	29.3	172	44.7	57.5	60.1
114	34.2	28.5	29.8	173	44.8	58.0	60.6
115	34.4	29.0	30.3	174	45.0	58.5	61.1
116	34.6	29.5	30.8	175	45.2	59.0	61.7
117	34.8	30.0	31.4	176	45.4	59.5	62.2
118	34.9	30.5	31.9	177	45.6	60.0	62.7
119	35.1	31.0	32.4	178	45.7	60.5	63.2
120	35.3	31.5	32.9	179	45.9	61.0	63.8
121	35.5	32.0	33.4	180	46.1	61.5	64.3
122	35.7	32.5	34.0	181	46.3	62.0	64.8
123	35.8	33.0	34.5	182	46.5	62.5	65.3
124	36.0	33.5	35.0	183	46.6	63.0	65.8
125	36.2	34.0	35.5	184	46.8	63.5	66.4
126	36.4	34.5	36.1	185	47.0	64.0	66.9
127	36.6	35.0	36.6	186	47.2	64.5	67.4
128	36.7	35.5	37.1	187	47.4	65.0	67.9
129	36.9	36.0	37.6			65.5	68.4
130	37.1	36.5	38.1			66.0	69.0
131	37.3	37.0	38.7			66.5	69.5
132	37.5	37.5	39.2			67.0	70.0
133	37.6	38.0	39.7			67.5	70.5
134	37.8	38.5	40.2			68.0	71.1
135	38.0	39.0	40.8			68.5	71.6
136	38.2	39.5	41.3			69.0	72.1
137	38.4	40.0	41.8			69.5	72.6
138	38.5	40.5	42.3			70.0	73.2
139	38.7	41.0	42.8				

* Cardiac area = 0.180 × height + 1.045 × weight + 13.7.
Example: For a child 147 cm. tall weighing 43 Kg., add the value of 40.2 sq. cm. obtained from the height column to the value 44.9 sq. cm. obtained from the weight column. The sum 85.1 sq. cm. is the predicted frontal plane area of the heart.

We have, therefore, chosen the following formula as the one best suited to clinical use:

$$\overline{F} = 0.180\ H + 1.045\ W + 13.7$$

$\overline{F}$ = the area in square centimeters of the frontal plane silhouette of the heart
H = the child's height in centimeters
W = his weight in kilograms.

This we refer to as the "child formula."

In order to facilitate application of the formula, we have expressed it in a table similar to those used with the adult formula (table).

The column at the left lists statures in centimeters (H). The second column shows values corresponding

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to 0.180 H plus the constant 13.7. In the third column are weights (W) in kilograms, and opposite each in the fourth column the value for 1.045 W.

To find the probable normal cardiac area of a particular child, one locates his height in the height column and, to the figure corresponding to this value, adds the figure corresponding to his weight. The sum of the two constitutes the predicted cardiac area in square centimeters.

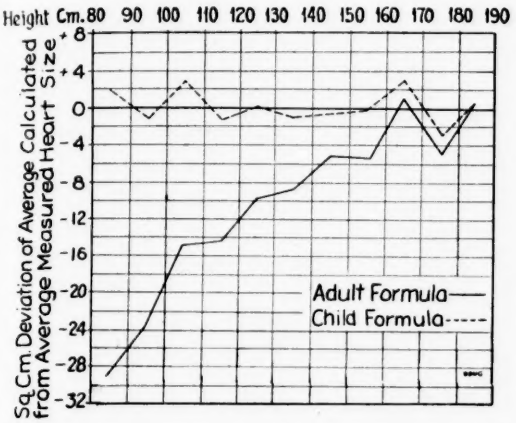

Chart 1.—Central tendencies of cardiac area predictions by height groups.

While it was obvious that the adult formula with its large negative constant would predict hearts much too small for the smallest children, still it was only by trial that we could determine the relative accuracy of the two formulas throughout the height range. This study has been made, and chart 1 shows the relationship between the observed areas of the Mooseheart children and predictions from the adult formula and the child formula. The cases were separated into eleven classes on the basis of height, and the predictions for the cardiac area by each formula were averaged in each class. The amounts by which these average predictions varied from the average observed size were recorded as points which, joined together, form the curves of the graph. The horizontal zero line represents the average observed size of the heart in each group. The broken line shows the amount by which predictions of the size of the heart from the child formula deviate from the observed size. Note that the deviations swing from plus to minus back and forth across the zero line but never depart from it greatly. The solid line shows the amounts by which predictions from the adult formula deviate from observed areas. Here in the shorter subjects the prediction is as much as 28 sq. cm. too small, but for heights above 160 the results are about as satisfactory as with the child formula.

Chart 2 approaches the problem from another direction. For every case in each of the eleven height groups there was tabulated the absolute amount by which the prediction from the child formula and that from the adult formula deviated from the observed cardiac area. The average amount of this deviation was computed for each group, and then these averages were charted. The horizontal zero line shows the observed cardiac areas. The broken line records the average deviations of the predictions from the child formula; the solid line, the average deviations of the predictions from the adult formula.

The steady upward slope of the broken line is caused by the fact that we have plotted absolute values rather than percentages. With increasing stature, the measured size of the heart becomes larger, and the same is true of the absolute values of the deviations.

If one uses two formulas for different classes of a population which merge gradually with one another, one is faced with the problem of deciding where the validity of one ceases and the validity of the other begins. The difficulty is minimized in this case by the fact that while the child formula is much better in predicting the size of the heart in children less than 160 cm. and the adult formula is to be preferred in adults, still there is a considerable intermediate group of taller children in which the two are about equally satisfactory. This will probably make it possible to set up an arbitrary height dividing line and then use the child formula below and the adult formula above that point. Subject to further experiment, we are using 170 cm. as the arbitrary dividing line. This corresponds roughly to an age of 17 years. In doubtful cases we sometimes predict the area from both formulas and extract the mean of the two predictions. It is possible, of course, that another study on a larger population might allow construction of an equation applicable throughout a wide range of heights, weights and therefore ages.

Before final judgment can be passed on the validity of our child formula, it is necessary that it be applied to an entirely independent sample of the population. As yet we have not been able to make such a study on a group large enough to establish a valid statistical check and, since studies of this sort are expensive in time and material, we may not soon be able to do so. We have, however, been able to apply the equation to a group of twenty-two children from the pediatric service of the University of Chicago Clinics, whose hearts were regarded as normal on physical examination. The children were not normal, otherwise they would not have been brought to the clinic, but patients with evidence of heart trouble were excluded.

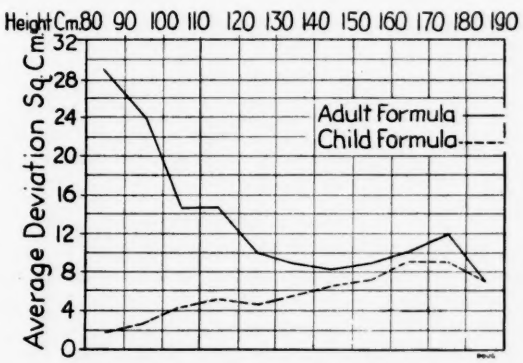

Chart 2.—Average absolute deviation of measured from calculated heart size by height groups.

The results of this study are shown in chart 3. The polygon below deals with 169 Mooseheart cases. It shows the number of instances in which the measured area was larger or smaller than the predicted area by 5, 10, 15, 20 per cent and so on. The upper polygon shows the same analysis of twenty-two children from the pediatric clinic, though it should be noted: The vertical scale, which shows the number of cases, has been doubled to make the findings more obvious. The little rectangular block at the left of the figure repre-

sents the findings in a child of 10 with a diagnosis of cerebral agenesia and epilepsy. In this case the observed cardiac area was 38.5 per cent less than the prediction. At the right of the figure, a similar block records the situation in a child of 5 who had suffered from acute bronchitis every winter since birth. Here the observed cardiac area was 27 per cent greater than the predicted area. With these exceptions, observations on this small group conform with those of the original series.

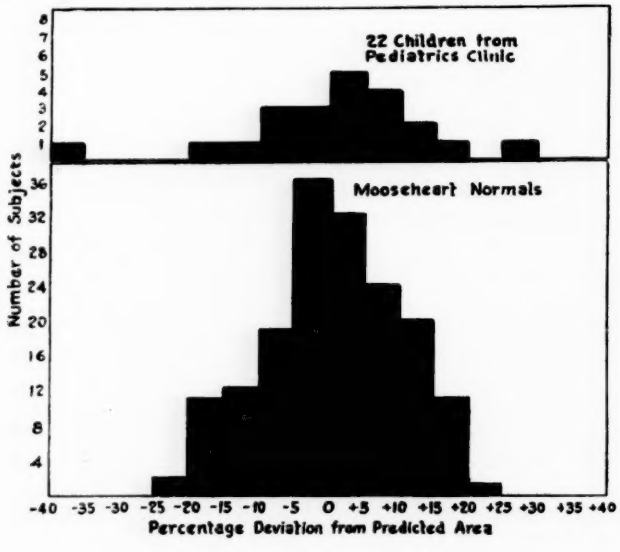
22 Children from Pediatrics Clinic
Moosehearl Normals
Number of Subjects
Percentage Deviation from Predicted Area
-40 -35 -30 -25 -20 -15 -10 -5 0 +5 +10 +15 +20 +25 +30 +35 +40

Chart 3.—Results of study on children.

It is possible that special formulas including a consideration of body build may be more accurate in predicting the size of the heart of unusually slender or unusually obese children.

SUMMARY

1. Roentgen examinations conducted for the purpose of finding out whether the heart of a sick child is enlarged presume a knowledge of the normal size of the heart of that child. Tables and formulas exist for predicting the normal size of the heart from the height and weight in adults, but there has been need for similar equations for children.

2. As the result of teleoroentgenographic studies on 169 carefully selected normal children ranging in age from about 3 years to about 19 years, such an equation has been developed. It reads:

$$\overline{F} = 0.180H + 1.045W + 13.7$$

3. A table is published by means of which estimates of the normal size of the heart can be made rapidly without computations.

ABSTRACT OF DISCUSSION

DR. JULIUS H. HESS, Chicago: In the past the radiographer would report on the relationship of the heart diameter to that of the chest wall, and calculations were largely based on whether there was an increase over the normal or expected normal. The authors have attempted to produce for the child a table comparable to their earlier studies for use with adolescent and older individuals. They have simplified the work of estimating the size of the heart or at least have furnished a standard set of formulas by which, with the simple method of Bardeen, the size of the heart can be estimated. They have not attempted to replace a physical examination or examination by other mechanical methods. In other words, they have simply presented a set of figures or a formula that will supply a working standard, to be used as a comparison for the child at hand. Naturally the depth of the heart, the cardiovertebral depth, must be known. This can be estimated by making an esophagram. It must be recognized that early in cardiac conditions there may not be any deviation even in the depth, let alone in the surface size of the heart. But later, in mitral insufficiency complicated by stenosis, in mitral conditions complicated by the aortic regurgitation more especially, there are marked deviations. Of course, this simply gives the surface measurement, and it must be supplemented with further clinical and physical data in order to present a true clinical picture of the condition of the heart. It is necessary to have the pulse rate at the time of examination. An electrocardiogram can be of immense value, as well as the systolic and diastolic blood pressure. Last, but not least, in order to come to a definite conclusion, one must have a careful history and a physical examination by the stethoscope and by palpation. The authors have presented something that is of material assistance and much more accurate than the simple estimation of the transverse diameter of the heart as against that of the chest wall.

DR. PAUL C. HODGES, Chicago: It is true that this paper deals not at all with heart disease but rather with normal heart size. There is a quite general opinion that the size of a person's heart as seen in roentgenograms is related to the diameter of the chest more closely than to any other body diameter. I have held that view and my teachers have held it before me. The only difficulty with it is that it is not true. Strangely enough, Eyster has been able to show by detached mathematical procedures that heart size is related to height and weight more closely than it is to chest diameter or numerous other body diameters studied by him. To make an ordinary short-distance chest film of a child and just look at the heart is better than to make no film at all. To make the film at a long distance is still better. To measure the transverse diameter of the heart in a long-distance film is better than to guess at the diameter, but to measure the area is better than to measure the diameter.

TREATMENT OF CHRONIC INFECTION OF THE PELVIS

A CONSIDERATION OF THE ELLIOTT METHOD

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ROCHESTER, MINN.

I shall consider in this paper the surgical and nonsurgical treatment of chronic infections of the pelvis by prolonged heat in the vagina, as applied in Elliott's technic in addition to the surgical procedures in delayed cases. The advantages of this technic postoperatively in reducing morbidity in cases in which operation is necessary will also be considered.

In view of the fact that an extremely high percentage of chronic invalidism among women is directly attributed to inflammatory diseases of the pelvis attended by pain, backache, menstrual irregularities, chronic exhaustion and sterility, its significance to the general practitioner becomes apparent at once. Any new method of treating inflammation of the pelvis, which has been tested and shown to be of distinct advantage in reducing the period of disability and the number of cases in which operation would otherwise be required, should be tried.

THE ERA OF CONSERVATIVE SURGERY IN GYNECOLOGY

Simpson,[1] in 1909, was influential in establishing a new era in the treatment of pelvic inflammation of

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Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eigthy-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Simpson, F. F.: The Choice of Time for Operation for Pelvic Inflammation of Tubal Origin, Surg., Gynec. & Obst. **9**: 45-62 (July) 1909.

tubal origin. He reported a series of 456 cases in which surgical treatment was given, with a mortality rate of 1 per cent following a delayed period of conservative treatment, as compared to a rate of from 15 to 20 per cent accompanying the then established plan of immediate operation. He maintained that the patient should have recovered from the acute attack, which usually required that the temperature be normal for approximately three weeks even after examination of the pelvis, thereby indicating complete absorption of the inflammatory exudate, before any operation was advisable.

Crossen,[2] also in 1909, independently advocated similar fundamental principles and, in addition, distinguished between the clinical picture of pelvic infection due to gonococci and that due to streptococci. He stressed particularly the mode of infection, the anatomic situation, and the virulence of each organism, because a fundamental knowledge of these was essential to separate the groups clinically and to institute appropriate treatment in each case. The point of importance was that gonococci affect primarily the tube and secondarily the ovary and pelvic peritoneum, producing a pus tube or tubo-ovarian abscess which usually became sterile within a few weeks, whereas streptococci penetrate the wall of the uterus and extend into the connective tissue, producing perimetritis with fixation and tenderness of the pelvic organs. The virulence of the streptococcus persists indefinitely, and an abscess rarely becomes sterile. In order that other investigators might more easily distinguish between the two infections, Crossen pointed out that the distinguishing features of a chronic perimetrial mass are: (1) its situation in connective tissue, usually in the broad ligament; (2) its intimate blending with the wall of the uterus, as though it were a part of it; (3) its intimate blending with the wall of the pelvis, as though it were an outgrowth from it, and (4) its hardness, often simulating a cartilaginous or bony tumor growing from the wall of the pelvis. A tubo-ovarian mass, on the other hand, was distinguished by its situation high in the pelvis or prolapsed into the culdesac and not blending so intimately with the walls of the uterus or pelvis; it was usually softer also. Crossen emphasized that abdominal section for a streptococcal mass in the pelvis is always dangerous, as fatal peritonitis might result, and that operation in all other cases should be delayed until the period of probable sterilization has passed, except in rare cases in which, in spite of palliative measures, life is endangered by the severity of the infection.

The conservative treatment of chronic perimetritis was further emphasized by McMorrow,[3] since this group is composed of many patients who continually suffer from dismenorrhea, backache, leukorrhea, vague and obscure pains associated with headache, nausea and menstrual irregularities; frequently repeated pelvic operations were performed without benefit. The mode of treatment was that which was then in use in the Allegemeines Krankenhaus in Vienna; this consisted of gentle pelvic massage with a view to increasing the blood supply to the uterus and perimetric cellular tissue, stretching the scars in the broad ligaments and breaking up the adhesions in the culdesac and thereby replacing the uterus in its normal position. Several cases are reviewed in which results were excellent; the patients were relieved of their symptoms and the normal menstrual cycle was restored. A distinct drawback is that the treatment should be continued weeks or months.

The bacteriologic studies of salpingitis by Curtis[4] have advanced the idea of conservative treatment of such conditions. He concluded that fallopian tubes infected with the gonococcus become sterile approximately fifteen days after the symptoms of the acute infection have subsided and that if symptoms reappear later they are due to reinfection and not to exacerbation of the original infection. It is his belief that if reinfection can be avoided in cases in which gonorrheal salpingitis is present, clinical cure can be obtained without operation in 85 per cent of the cases. In the small group of 15 per cent, surgical treatment will be required, but this should be directed toward conservation of tissue rather than its removal. Furthermore, in order to be reasonably sure of avoiding operation in cases in which streptococcic infection is active, he advised that operation be delayed two years from the time of the original infection.

Miller,[5] in 1927, reviewed all the arguments of the advocates of immediate operation for inflammatory diseases of the pelvis, and from his results and those of others he was satisfied that conservative treatment was the procedure of choice. However, not infrequently for patients in charity hospitals and for some private patients, the economic factor might influence a surgeon to operate before it is entirely desirable, although this should not be done until the temperature has been normal for ten days, even after repeated bimanual pelvic examinations. Aldridge[6] concluded, from his studies of operative results in 1,066 cases of salpingitis, that laparotomy for the cure of salpingitis, when the infection is still active, should be avoided, since his analysis proved that operation in the presence of infection is accompanied by an unjustifiable mortality, excessive morbidity, especially from shock, sepsis and defective healing of the wound as well as disappointing end-results. Furthermore, appropriate conservative palliative measures should be instituted in all cases immediately over long periods, with the object of effecting spontaneous cure.

Bourne, Bonney and Bell,[7] although advocating conservative treatment for pelvic infections resulting from the streptococcus, feel that when infections are caused by the gonococcus, conservative surgical procedures, such as incision and drainage of the fallopian tubes or salpingectomy, are perferred during the acute attack, particularly if they seem advisable as a protective measure against future operation on the pelvis to conserve ovarian tissue. Such views concerning salpingitis of gonococcal origin are in direct variance with those of many able gynecologists in this country; it is also true that many advocate early operation, but I feel that they are in the minority. The trend toward palliative measures, such as hospitalization, Fowler's position, ice bags to the lower part of the abdomen, hot douches or diathermy, vaccine and protein therapy, is greater today among general practitioners and gynecologists than ever before.

2. Crossen, H. S.: What Is the Preferable Time for Abdominal Operations for a Chronic Inflammatory Mass in the Pelvis? Surg., Gynec. & Obst. **9**: 405-416 (Oct.) 1909.
3. McMorrow, Frank: Some Old Pelvic Inflammatory Diseases: Their Nonsurgical Treatment, with Report of Cases, J. A. M. A. **60**: 966-968 (March 29) 1913.
4. Curtis, A. H.: Bacteriology and Pathology of Fallopian Tubes Removed at Operation, Surg., Gynec. & Obst. **33**: 621-631 (Dec.) 1921.
5. Miller, C. J.: A Rational Treatment of Tubal Disease, Surg., Gynec. & Obst. **45**: 110-114 (July) 1927.
6. Aldridge, A. H.: An Analysis of Operative Results in 1,066 Cases of Salpingitis, Am. J. Obst. & Gynec. **19**: 381-391 (March) 1930.
7. Bourne, A. W.; Bonney, Victor, and Bell, W. B.: Discussion on the Treatment of Acute Salpingitis, Brit. M. J. **2**: 399-402 (Sept. 8) 1923.

HEAT FOR INFLAMMATION OF THE PELVIS

Although the use of heat in the treatment of pelvic inflammatory disease has never been considered the principal factor of all the conservative measures that have been applied from time to time, nevertheless its use in some form has been progressively increased in recent years. Early medical records refer to the hot vaginal douche as a cleansing agent, used for the relief of pelvic pain. Holden and Gurnee [8] related that German physicians heated shot and poured it into the vagina in order to maintain prolonged heat and greater distention of the vagina than could be obtained by the injection of hot water alone. The therapeutic effect of prolonged hot douches was advocated by Gellhorn,[9] who discovered that the mucous membrane of the vagina could tolerate much higher temperatures than the skin of the vulva or perineum. He advised using no less than 2 gallons of water at a temperature of from 115 to 120 F. as a vaginal douche, placing the patient in a bath tub with the skin of the perineum and external genitalia protected with petrolatum. He reported excellent results from the method in inflammatory disease of the pelvis, and in many such cases the patients were clinically relieved without operation.

Because it was difficult to obtain proper nursing care, or because patients were unable to administer to themselves a prolonged vaginal douche, other methods have been developed which make it possible to apply heat of a constant temperature in the vagina for a fixed period; the degrees of heat can be automatically varied according to the tolerance of the patient and the severity of the inflammatory disease. The first of these methods was medical diathermy. This has been used by gynecologists practically everywhere, and the beneficial results obtained are unquestioned. Cherry [10] stated that in 72 per cent of his series of 100 cases, the pelvic inflammation was either improved or cured. It was his opinion that the beneficial results were directly due to the destruction of bacteria in the tissues from the prolonged high temperatures in the vagina, which varied from 104 to 122 F. When used before operation in chronic cases for several days, there was more vascularity and mobility of the pelvic organs, thus rendering conservative operations easier and contributing to a much smoother convalescence. Scheffey and Schmidt,[11] in a carefully studied group of cases of inflammatory diseases of the pelvis, obtained about the same percentage of good results; they attributed these results not to the destruction of organisms in the tissues but to the increased circulation incident to the prolonged heat in the vagina, which produced an enormous local increase of phagocytic leukocytes, increased cellular metabolism and the absorption of exudates. Gellhorn, and other investigators who used diathermy extensively at one time, were of the opinion that the temperature in the tissues between the two electrodes could average from 104 to 122 F., but Bettman and Crohn,[12] in carefully controlled experiments, concluded that the specific resistance of the various tissues between the electrodes, including the skin and the vaginal mucous membrane, confines the main increase in temperature near the electrodes, with only a proportionate increase in the deeper tissues.

Medical diathermy unquestionably would have been used more extensively by the general practitioner, but it required considerable costly apparatus and much experience with and knowledge of the diathermic current. Burns of the vaginal mucous membrane have been reported following its use. Another very distinct objection to an electrode in the vagina is the anatomic configuration of the vaginal mucous membrane. In normal conditions this is in rugae or folds, whereas in inflammatory conditions these may be greatly increased so that temperature produced from an electrode would be quite unevenly distributed and therefore less effective than some apparatus that would distend the vagina, thereby flattening out the vaginal folds and obtaining greater surface area and closer contact to the diseased adnexa.

A distinct advance in the use of heat over preceding methods has been achieved by Elliott,[13] who devised a rubber bag that can be inserted in the vagina around the cervix through which a current of hot water maintained at a constant temperature is circulated by a small electric motor while the water pressure delivered by the pump distends the bag in the vagina. The temperature of the water and the pressure in the bag may be absolutely controlled for any length of time. The temperature of the water in the machine is regulated by a thermostat, and investigations so far reveal that the temperature should not exceed 130 F. The average time for a treatment is one hour, which varies, depending on the patient's tolerance to heat. Holden has shown that a temperature of 130 F. in the vagina for one hour will produce a temperature of 106 F. in the pelvic peritoneal cavity and rectum and a temperature of 104 F. within the bladder without any disturbance in the general temperature of the body. Furthermore, it has been observed that there is marked hyperemia in the pelvic tissues, an average increase of 17 per cent in leukocytes in 87 per cent of patients treated, a local elevation of temperature in the vagina, uterus, rectum, bladder and pelvic peritoneal cavity of from 5 to 7 degrees F. and a profuse discharge from the cervix and vagina.

In 500 cases of acute and chronic inflammation of the pelvis in which the Elliott method of treatment was used by Holden and Gurnee, excellent results were reported. In some cases, treatments were given as a preoperative preparatory measure, but after a few treatments the lesions disappeared and operation was not necessary. In ten cases of pelvic abscesses in which treatment was given following drainage of the culdesac, in a few days all traces of pelvic inflammation disappeared. Of twenty-three cases of pelvic abscesses in which treatment was given as a preoperative measure, in only three cases was subsequent drainage of the culdesac necessary because of persistent fluctuation. Holden and Gurnee's studies would indicate that all types of pelvic inflammation responded satisfactorily to this form of treatment. Graham [14] and Jacobs, Vaughan and Gellhorn [15] reported similar good results, particularly in gonorrheal salpingitis and pelvic infections following abortion.

8. Holden, F. C., and Gurnee, W. S.: The Elliott Treatment: A New Method of Applying Vaginal Heat, Am. J. Obst. & Gynec. **22**: 87-96 (July) 1931.

9. Gellhorn, George: Nonoperative Treatment in Gynecology, New York, D. Appleton & Co., 1923.

10. Cherry, T. H.: The Results of Diathermy in Pelvic Infections, J. A. M. A. **86**: 1745-1748 (June 5) 1926.

11. Scheffey, L. C., and Schmidt, W. H.: Diathermy as an Adjunct in the Treatment of Pelvic Inflammatory Disease, Am. J. Obst. & Gynec. **18**: 230-239 (Aug.) 1929.

12. Bettman, R. B., and Crohn, N. N.: Diathermy in the Production of Deep Temperature, J. A. M. A. **88**: 532-537 (Feb. 19) 1927.

13. Elliott, C. R., cited by Holden and Gurnee.[8]

14. Graham, H. F.: Elliott Treatment of Pelvic Inflammations, Am. J. Surg. **16**: 423-426 (June) 1932.

15. Jacobs, R. G.; Vaughan, J. R., and Gellhorn, George: Preliminary Report of Pelvic Inflammatory Diseases Treated by the Elliott Method at the St. Louis City Hospital, Bull. St. Louis M. Soc., June 5, 1931.

Holden and Sovak[16] report that they found the Elliott method to be beneficial as a preoperative and as a postoperative measure in reconstruction of the oviducts following pelvic infections. From twelve to twenty-eight treatments were given three or four weeks before operation, which frequently reduced the magnitude of the operation and made the tissues more nearly normal in appearance. Some fallopian tubes that did not remain patent after the operation, as shown by the Rubin test within two or three days, would frequently become patent following the use of the Elliott treatment, as a result of the rapid absorption of exudate and increased vascularity of the tissues.

DATA CONCERNING FORTY-THREE CASES

More than a year ago, the Elliott method of treatment for inflammatory disease of the pelvis was introduced in the Mayo Clinic and has been used in almost all types of pelvic infection. In view of the fact that little has been said about the results of the method, especially when used postoperatively, it seemed advantageous not only to confine this report to a group which includes the results obtained in cases in which operation was performed and in cases in which operation was not performed, but to depict points in the surgical technic involved in some of the more difficult and often hazardous cases. This series of forty-three cases is, of course, not sufficient to justify positive statements in regard to treatment used as a routine, but some interesting facts have been observed and may be a distinct guide to future treatment. The age variation is particularly striking, as shown in the accompanying chart.[17] Twenty-one patients (48.8 per cent) were between the ages of 20 and 29 years, thirteen (30.2 per cent) were between 30 and 39, and nine (20.9 per cent) were between 40 and 49. In 33.3 per cent of cases in the first age group inflammatory lesions of the pelvis had been present for a long time, and often the patients had been subjected to previous operations. In several cases uterine and ovarian tumors had developed, and immediate operation was advised; the operation was followed in from five to seven days by the Elliott method of treatment. In 66.7 per cent of cases in which ovarian or uterine tumors or fecal fistulas had not developed following previous operations on the pelvis, only the Elliott treatment was given. In the second and third age groups the patients were similarly selected. In 46.2 per cent of cases of the second age group, treatment was surgical, with the application of the Elliott treatments after operation, and in 53.8 per cent treatment was by the Elliott method only. In 66.7 per cent of the third age group the patients were operated on, and the Elliott treatments were given after operation, whereas 33.3 per cent of the patients were treated by the Elliott method only.

The results of treatment were designated as good, fair and poor. At the time of the patient's dismissal, if bimanual examination did not reveal tenderness, palpable masses or thickening of adnexa, the result was classified as good. If there was thickening of the adnexa and residual tenderness, graded 1 to 2, the result was considered fair. If there was no change or the patient was uncooperative, the result was considered poor.

Nineteen patients were operated on and received, on an average, twelve Elliott treatments during convalescence or before they were dismissed from observation. In sixteen cases (84.21 per cent) the results were good, and in three (15.79 per cent) they were fair. End results for the entire group were satisfactory in 100 per cent. The average date of dismissal after operation was on the fourteenth day. If further Elliott treatments were considered advisable they were given as ambulatory measures, the patients returning to the hospital only for one-hour periods of treatment.

There were twenty-four cases in the nonsurgical group, or in which the Elliott treatment only was used. The majority of these patients were permitted to remain at home and come to the hospital for one hour each day for the treatment. In a few cases in which the disability was not too severe, the patient was able to continue at work, and came to the hospital daily for the one-hour treatment. A small number of the more severely ill patients were in the hospital for about five to fourteen days, when they were either dismissed from observation or were permitted to live outside the hospital and continue their treatments daily as ambulatory patients. In fourteen of the twenty-four cases (58.33 per cent) the results were classified as good and the patients were free from symptoms of the disease; in three (12.5 per cent) the results were fair and in seven (29.17 per cent) they were poor. Considering the entire group of twenty-four cases, the results were satisfactory in 70.83 per cent.

Analysis of the seven cases in the nonsurgical group, in which the results were poor, revealed that in three cases the patients were poorly selected, as their complaints were unfortunately associated with conditions unrelated to the pelvic organs. Included in these was a case of Hunner's ulcer of the bladder in which sympathectomy of the presacral nerves was performed later; the second case was one of sacro-iliac arthritis in which pain was referred to the right adnexal region, and in the third case chronic right salpingo-oophoritis was present but was associated with arthritis. Following the Elliott treatment, the pelvic adnexal mass became reduced but continued to remain tender. Three months later, however, the patient became pregnant and was delivered of a living infant at term. The remaining four patients, on account of economic conditions, were unable to remain long enough to be benefited by the treatments. This is to be regretted, since the condition of each patient was such that she should have been freed from further symptoms of pelvic infection, and furthermore satisfactory results in the medical group might have been recorded as 87.5 per cent.

A comparison of the results in all three age groups reveals that the number of cases in which operation was required is practically constant throughout, but that whereas the percentage of cases in the fourth decade in which operation was performed is approximately equal to that in which operation was not performed, the percentages are exactly reversed in the third and fifth decades. It would seem, therefore, that there is a group of cases in which at the very beginning of the infection operation will be required, and that this group will remain fairly constant for a given number of years, but very careful treatment is required in order properly to divide the cases into their respective groups. Furthermore, the greatest number of inflammatory diseases of the pelvis occurs during the third decade, and the percentage incidence diminishes during the fourth and fifth decades.

16. Holden, F. C., and Sovak, F. W.: Reconstruction of the Oviducts: An Improved Technic with Report of Cases, Am. J. Obst. & Gynec. **24**: 684-695 (Nov.) 1932.

17. To conserve space the chart has been omitted here. It will appear in the author's reprints.

SURGICAL CONSIDERATIONS

It has been said that the surgery for chronic inflammatory disease of the pelvis following conservative treatment should be reconstructive, which without question is true in many cases, especially in which plastic operations are to be performed on one or both tubes or in which partial resection of the ovaries is to be performed, together with freeing of pelvic adhesions when the uterus is held retroverted or retrocessed. Holden and Sovak have shown that plastic operations on the fallopian tubes are more successful if they are preceded by a course of Elliott treatments, and that some tubes known to be occluded two or three days after operation, as shown by the Rubin insufflation test, will subsequently reopen if the Elliott treatment is continued during convalescence. It is possible, therefore, that with wider application of the Elliott treatment and greater care in the selection of cases for treatment the number of patients with subacute and recurring chronic pelvic inflammatory disease requiring operation will be reduced still further.

Besides the group of cases in which reconstructive surgery can be applied, there is one group in which operation necessarily is eliminative as well as reconstructive; this includes the cases of the surgical group reported here. The disease in such cases usually follows a definite course: initial salpingo-oophoritis followed by a tubo-ovarian abscess and, in some cases, by perforation and drainage into the culdesac, rectum or sigmoid. Often the appendix is involved secondarily or the infection may be associated with ovarian cysts and dermoid and fibroid tumors. These patients belong definitely to the surgical group, but extreme care and judgment must be exercised in selecting the proper time for operation. Since operation is difficult, injury to the sigmoid, rectum and bladder may occur, owing to the edema and induration of their respective muscular walls, should the time for operation be misjudged. If a tubo-ovarian abscess perforates into the bowel, chronic cellulitis subsequently develops and will remain active for many months unless treatment is instituted at the onset.

When a tubo-ovarian abscess perforates into the sigmoid colon or when a fecal fistula occurs in the sigmoid colon postoperatively during the acute or subacute stage of pelvic inflammation, the morbidity is greatly increased. The difficulty encountered in the repair depends mainly on the situation in the bowel and the amount of pelvic peritonitis or residual cellulitis present. In one case a tubo-ovarian abscess had perforated into the sigmoid colon. In three cases it was found that postoperative fecal fistulas had developed in the sigmoid colon following operations elsewhere. In some cases, the pelvic infection was associated with hemorrhagic ovarian cysts and in others there were large uterine fibromyomas. Operations in such cases, even under the most favorable conditions, are always associated with a certain amount of trauma, postoperative inflammatory exudate, serum, and pelvic infection and often entail long convalescence and a high morbidity and mortality.

The Elliott principle of applying prolonged vaginal heat as a postoperative measure stimulates rapid absorption of the exudate, shortens the convalescence, reduces the morbidity and thereby contributes much to a successful surgical result. In this series, satisfactory results were obtained in 100 per cent of the cases, and the time required in the hospital was less than two weeks.

SUMMARY

A high percentage of chronic infections of the pelvis can be cured clinically by the prolonged and sustained application of heat to the vagina, the Elliott technic being used. It is apparent, however, that there is a fairly constant small percentage of cases of chronic infections of the pelvis in which operation will be required. Complications are often caused by lesions of other pelvic structures and intestines. Satisfactory results following operations in this group are best obtained by the use of the Elliott technic, usually beginning on the fifth day.

ABSTRACT OF DISCUSSION

DR. FRANCIS W. SOVAK, New York: Dr. Counseller has presented an efficient and simple method of applying heat by way of the vagina in the treatment of chronic pelvic infections. At Bellevue we have markedly lowered our operative incidence in chronic pelvic infections since we began the use of the Elliott technic, and we feel that total ablation of the pelvic organs is poor gynecologic practice. After a few treatments there have been noted a feeling of well being, softening of the masses, and the approach to normal temperature; and after a full course of treatment, mobility of the uterus, freedom from symptoms, a normal menstrual cycle and lessened time of hospitalization. I would not attempt to operate for bilaterally occluded oviducts unless a series of Elliott treatments had been given previously. The tissues become less edematous and less friable, and adhesions disappear or are filamentary. I resume treatment after operation to insure patency. All foci of infection of gonorrheal origin must be cleared up without the use of antiseptic applications or douches. The vagina is dried before and after each treatment. I depend on the dilated blood vessels producing a local leukocytosis and exudation and on the general increased leukocytosis which has been proved to exist at an average of 17 per cent, the temperature of the urethra being 104 F. and of the cervix 106. At Bellevue the first thirty cases treated and reported by Holden and Gurnee cleared up symptomatically and bacteriologically after eighteen daily treatments to the cervix and twenty to the urethra. My experience in using the Elliott treatment postoperatively has been limited to my operations on the oviducts and in the treatment of shock. Excellent results have been obtained.

DR. CARL HENRY DAVIS, Milwaukee: A point which I believe should be emphasized is that treatment must be varied according to the nature of the infection. It also makes a great deal of difference as to whether or not one is taking care of a private patient or a patient seen in a charity service. My experience with conservative treatment in private practice is very satisfactory. On the other hand, in the county hospital type of patient it is most unsatisfactory because of the fact that the patient leaves the hospital, has a new infection within a short time, and keeps coming back until finally some type of pelvic surgery must be done. I wish that Dr. Counseller would tell about the value of the Elliott treatment in the management of the postabortive patient with a frozen pelvis.

DR. VIRGIL S. COUNSELLER, Rochester, Minn.: Dr. Sovak places well deserved emphasis on the technic employed in this treatment and discusses the results as observed in the vagina and cervix; he also mentions the fact that the method is advisable as a preoperative measure. The results obtained by Dr. Sovak in plastic operations on the fallopian tubes, in which the Elliott treatment has been used as a postoperative measure, illustrate the value of the method. A physician must be careful when applying the treatment in cases in which abortion has occurred, as brought out by Dr. Davis. I do feel, however, that some very satisfactory results have been obtained in this group. The treatment is given slowly, usually starting with the temperature at 110 F. for half an hour, with gradual increase to 130 F. for one hour. If a reaction occurs, the treatment must be discontinued. It is important to distinguish between the postabortive and the gonococcic types of infection. The former type requires more prolonged treatment than the latter. Another important point brought out by Dr. Davis, which is

invariably true, concerns the patients in charity and county hospitals. It must be remembered that physicians of these hospitals have no control over the mode of life of these patients after they leave the hospital, and it is in this group that perhaps less conservative methods should be employed, and tissue actually extirpated.

OCULAR DISTURBANCES PRODUCED IN EXPERIMENTAL ANIMALS BY DIETARY CHANGES

CLINICAL IMPLICATIONS

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Investigators on nutrition have found that animal experimentation is necessary in carrying on their work. Much of the progress attained in this field was made possible by the use of small animals, particularly the albino rat. They reach their maturity and begin to breed at about 90 days of age, and they rarely live to be more than 3 years old. It has been calculated that each day of a rat's life is equivalent to thirty days of man's life. Thus it is possible to conduct experiments over a whole life span in a comparatively short time. The rat can be maintained in excellent nutritive condition on a synthetic, or rather an artificial, diet consisting of purified protein, fat, carbohydrate and inorganic salts, together with a supplement of the necessary vitamins.

In studying the physiologic effects of any given component of the diet, the biologist often proceeds by feeding the aforementioned diet lacking the one factor under consideration. With this method the test animals may then be minutely observed, anatomically and functionally. Further, if an assay of some food for its content of this factor is desired, graded doses may then be superimposed on the deficient diet. The tests may be either curative or prophylactic in purpose.

Mendel points out that the "law of minimum" has become so firmly established for nutrition that one expects that the need of any essential will impede growth in animals as well as in plants, in cases in which the power is lacking to synthesize de novo the missing factor. In the case of the vitamins, other more specific evidences of pathologic function have been discovered.

An example of this is the characteristic ophthalmia that is an almost unfailing manifestation when the diet is lacking in vitamin A. This is a specific instance of a definite relation between a nutritional deficiency and resulting changes in the ocular tissues. It has also been pointed out that animals deprived of vitamin A have a poor adaptation to darkness after being exposed to the light.

Another example of the relation of a nutritional disturbance to changes in the eye is presented by the lack of some component of the vitamin B complex in the diet. For a number of years the water-soluble vitamin B was considered to be identical with the antineuritic vitamin discovered by Eijkman.[1] More recent work, however, has shown that this water-soluble vitamin is made up of several substances at least two of which are necessary in the rat for normal growth. One of these, B (B_1), is relatively thermolabile and has antineuritic and growth-promoting properties; and the other vitamin, B_2 (G), is more stable after heating even under pressure and also possesses growth-promoting properties and functions in the prevention or cure of pellagra-like symptoms in the rat. Recently, it was shown by Day, Langston and O'Brien[2] that cataracts develop in young animals kept protractedly on this G-free diet.

The lack of certain essential inorganic salts in the diet also may bring about ocular changes. Some years ago, Osborne and Mendel[3] investigated the influence of inorganic elements in nutrition by excluding, as far as possible, from the diets of different groups of rats, one or more of the following constituents—potassium, magnesium, calcium, sodium, chlorine and phosphorus. They found that the body cannot store any considerable amount of the mineral elements, so that if the diet is deficient in any of them over a sufficiently long period, the results of this shortage will necessarily be shown in the body of the animal sooner or later.

In the course of determining the smallest amounts of mineral elements necessary for the optimal growth of the albino rat, it was observed that many functional disorders were produced in the test animals under certain circumstances. With a diet low in inorganic salts, one of the observers noted a protrusion of the eyeball. The ocular phenomenon appeared regularly enough, so that it warrants recording.

Because of the frequency with which the ocular lesions have found their analogue in man, it is fitting that a brief review of the work done by my colleagues and me in this field be described. An attempt will be made to show the possible similarity between certain diseases in man and those in experimental animals subjected to known dietary deficiencies.

VITAMIN A

Animal Experiments.—Tests were designed to investigate the retina as a source of vitamin A. Young albino rats free from visible disease, varying in age from 21 to 30 days, and weighing from 45 to 50 Gm., were placed on a basal diet which was lacking vitamin A. This ration consisted of casein (extracted with alcohol and ether and then heated to 100 F. for twenty-four hours), 18 per cent; corn starch, 63 per cent; crisco, 15 per cent, and salt mixture (Osborne and Mendel[3a]), 4 per cent. Vitamins B, D and G were provided by 400 mg. of irradiated yeast daily fed apart from the basal ration. Distilled water was freely available. The efficacy of the retina as a source of vitamin A was judged by: (1) cure or prevention of ophthalmia; (2) resumption or maintenance of increase in body weight, and (3) absence of renal and vesicular calculi and of abscesses at the base of the tongue and in the middle ear at autopsy.

The following ocular changes were observed in these rats: First, there was an increase of lacrimation, which was accompanied by photophobia. Frequently this change came on simultaneously with a loss of body weight. Then the eye, normally prominent and protruding in this species, seemed to sink into its bony socket, and the animal appeared to dread the light

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Read before the Section on Ophthalmology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

1. Eijkman, C.: Eine Beri-Beri-ähnliche Krankheit der Hühner, Virchows Arch. f. path. Anat. **148:** 523, 1897.

2. Day, P. L.; Langston, W. C., and O'Brien, C. S.: Cataract and Other Ocular Changes in Vitamin Deficiency: Experimental Study on Albino Rats, Am. J. Ophth. **14:** 1005 (Oct.) 1931.

3. Osborne, T. B., and Mendel, L.B.: The Inorganic Elements in Nutrition, J. Biol. Chem. **34:** 131, 1918.

3a. Osborne, T. B., and Mendel, L. B.: Nutritive Value of the Wheat Kernel and Its Milling Products, J. Biol. Chem. **37:** 557 (April) 1919. The composition of Osborne and Mendel's salt mixture follows:

	Gm.		Gm.
Calcium carbonate	134.8	Citric acid plus water	111.1
Magnesium carbonate	24.2	Crystallized iron citrate	6.34
Sodium carbonate	34.2	Potassium iodide	0.020
Potassium carbonate	141.3	Manganese sulphate	0.079
Phosphoric acid, U. S. P.	103.2	Sodium fluoride	0.248
Hydrochloric acid	53.4	Potassium and aluminum sulphate	0.245
Sulphuric acid	9.2		

more and more.[4] The lacrimal secretion changed from a watery to a viscid sanguineous-tinged secretion. A slight edema of the eyelids became manifest, and there was an accumulation of a dry secretion in the ocular culdesac. The lid hairs fell out, and the lids became matted together. With the progress of the ocular disturbance, the cornea appeared hazy, particularly about the periphery. Patches of secretion which were fatlike and yellowish extended onto the corneal surface from the fornices, even to the center of the cornea. The latter became dry, oily and lusterless, losing its normal transparency. When the plaques were removed from the cornea, the surface did not show any disturbance, and it would not stain with fluorescein. Later, the ocular lesion would go on to corneal ulceration, perforation and panophthalmitis if the animal did not succumb.

Treatment.—When the eye showed a definite ocular change, the retinal tissue of the hog or steer was added to the basal diet. Previous experiments[5] showed that 50 mg. of dried retinal tissue restored normal growth and cured the ocular disturbance. It was estimated at this time that retinal tissue was equal in potency to good cod liver oil. A chemical examination of the retinal fat showed it to give certain colorimetric reactions exhibited by cod liver oil.

Comment.—Recently, von Euler and his co-workers[6] and Moore[7] amply demonstrated that small doses of the highly purified yellow pigment carotene suffice to cure rats that exhibit the symptoms of avitaminosis due to the lack of vitamin A. This observation immediately threw the experimental worker into confusion, for the question arose as to whether the substance previously fed was the alleged vitamin A or carotene. Several English workers[8] examined their materials photospectrographically with the result that the following differentiation was made:

Carotene	Vitamin A of Liver Oils
Synthesized in the plant	Stored in the animal
Orange-red	Almost colorless
328 mμ absorption band absent	328 mμ absorption band present
Greenish-blue antimony trichloride reaction showing absorption at 590 mμ	Vivid blue antimony trichloride reaction showing absorption at 572 and 606 mμ

In order to determine whether the active agent in the retinal tissue is vitamin A or carotene, it was necessary to study the lipoidal content of the tissue. It is apparent from the preliminary data that the substance which maintains growth and prevents xerophthalmia may be the same as that found in cod liver oil.

It has been suggested by many observers that some sort of change in the structure of the retina and its pigment epithelium layer might be expected during the stage of ocular disturbance to account for the alleged hemeralopia. Early observations did not reveal any disturbance of the tissue after ocular manifestations developed in the animal. Fridericia and Holm,[9] however, called attention to the adhesion of the retina to the pigment layer in animals on a diet lacking vitamin A. My co-workers and I[10] also observed changes in the choriocapillaris and pigment layers of the retina, but did not attempt to interpret them.

To what extent these results on rats are applicable to some human ocular disturbances remains to be established. For many years before the discovery of the vitamins, the belief was widely held that certain types of conjunctivitis occurring in children were of a dietary origin. Mori[11] made the important observation that the disease known as "hikan," prevalent among children in Japan and characterized by xerosis of the conjunctiva, could be prevented by giving various fish oils. Similarly, Ishihara[12] described numerous cases of night blindness in which cure was obtained by the administration of cod liver oil. They concluded that the cause of the condition was a deficiency of fat in the diet. Block[13] and Monrad,[14] studying the cases of conjunctivitis occurring in Danish children, also concluded that the disease was a dietary one. Block, while agreeing with Mori in believing that a fat deficiency was the main etiologic factor, suggested that a vitamin deficiency might be a contributory cause. Monrad, on the other hand, definitely inclined to the belief that a deficiency of accessory food factors was the cause.

It is suggested that night blindness is caused by a failure in the regeneration of the visual purple after its bleaching by strong light. Fridericia and Holm[9] showed that rats deficient in vitamin A placed in the dark after exposure to light show a subnormal rate of regeneration of visual purple. These results have been confirmed by Tansley,[15] who followed the course of regeneration of visual purple in normal rats and in rats deficient in vitamin A. She notes, however, that if the animals are well depleted of vitamin A, it takes longer for the visual purple to regenerate.

A review of the classic work on visual purple establishes the following facts that have remained to the present time almost unchallenged. The rods of the retina possess the substance known as visual purple, and the color of visual purple varies in different animals and under different circumstances. Under light stimulation, visual purple is bleached and becomes converted into a substance called visual yellow, which in turn by photochemical action is further changed into visual white. Visual purple will regenerate itself if the animal is kept in the dark and if the retinal tissue is not separated from the pigment layer. Hering[16] pointed out that visual purple may not be absent from the cones, particularly those of the human foveal area.

Edridge-Green[17] held that the visual purple is the sole visual substance and is the essential feature in the

4. Holm (Am. J. Physiol. **73:** 79,1926) describes the inability of the rat at this stage to become adapted to the dark after being exposed to the bright light. This observation has been corroborated by Sugita (Arch. f. Ophth. **116:** 653, 1925) and Tansley (J. Physiol. **71:** 442, 1931); they propose the term night blindness or hemeralopia for this disturbance. Tansley further notes that dark adaptation becomes poorer as the animal is continued on the basal diet.

5. Yudkin, A. M.; Kriss, Max, and Smith, A. H.: Vitamin A Potency of Retinal Tissue, Am. J. Physiol. **97:** 611 (July) 1931.

6. von Euler, B.; von Euler, H., and Karrer, P.: Beobachtungen an Epiphysen und an Leberextrakten von Ratten nach Carotinoidfütterung, Biochem. Ztschr. **209:** 240, 1929. von Euler, B.; von Euler, H., and Hellström, H.: A-Vitaminwirkungen der Lipochrome, ibid. **203:** 370, 1928.

7. Moore, T.: Vitamin A and Carotene: Association of Vitamin A Activity with Carotene in Carrot Roots, Biochem. J. **23:** 803, 1929; Vitamin A and Carotene: Vitamin A Activity of Red Palm Oil Carotene; Absence of Various Dietary Modifications upon Vitamin A Activity of Carotene, ibid. **23:** 1267, 1929.

8. Gillam, A. E.; Heilbron, I. M.; Hilditch, T. P., and Morton, R. A.: Spectographic Data on Natural Fats and Their Fatty Acids in Relation to Vitamin A, Biochem. J. **25:** 30, 1931.

9. Fridericia, L. S., and Holm, E.: Experimental Contribution to the Study of the Relation Between Night Blindness and Malnutrition: Influence of Deficiency of Fat-Soluble-A Vitamin in the Diet on the Visual Purple in the Eye of Rats, Am. J. Physiol. **73:** 63, 1925.

10. Smith, A. H.; Yudkin, A. M.; Kriss, Max, and Zimmerman, H. M.: Vitamin A Content of Retinal and Choroidal Tissue, J. Biol. Chem. **92:** xcii-xciii (June) 1931.

11. Mori, M.: Ueber den sogenannten Hikan (Xerosis Conjunctivae infantum eventuell Keratomalacie), Jahrb. f. Kinderh. **59:** 175, 1904.

12. Ishihara, S.: Zur Aetiologie der idiopathischen Hemeralopie bzw. Xerosis Conjunctivæ, Klin. Monatsbl. f. Augenh **15:** 596, 1913.

13. Block, C. E.: Clinical Investigation of Xerophthalmia and Dystrophy in Infants and Young Children, J. Hyg. **19:** 283 (Jan.) 1921.

14. Monrad, S.: Alimentary Gastro-Enteritis and Xerophthalmia, Ugesk. f. læger **79:** 1177 (July 19) 1917.

15. Tansley, Katharine: Regeneration of Visual Purple, J. Physiol. **71:** 442 (April) 1931.

16. Hering, cited by Parsons, J. H.: An Introduction to the Study of Color Vision, London, Cambridge University Press, 1915.

17. Edridge-Green, F. W.: Ophthalmology and Theory of Vision, Brit. J. Ophth. **1:** 423 (July) 1917.

retina which enables it to transform light into visual impulses. He believes that it is liberated from the rods and stimulates the cones. These facts would seem to indicate the existence of a continual intercourse between the pigment epithelium and the rods.

CLINICAL STUDY

With the foregoing observations before us, my co-workers and I studied nine cases of toxic amblyopia and two of retinitis pigmentosa in man to determine whether the ingestion and the parenteral injection of vitamin A would have an effect on the course of the disease. Simultaneously, five new cases of phlyctenular keratoconjunctivitis and three of old standing, having an acute exacerbation, were studied in a similar manner. The following progress was noted: A typical history of one of the cases of toxic amblyopia, having alcohol and tobacco as causative agents, will suffice as an example of the disturbance. The patient usually complained of a fogging of his visual acuity and was unable to carry on close work, even though the refractive error was corrected. The vision apparently was getting worse. An examination revealed that the visual acuity was usually less than 20/200 in both eyes; the pupils reacted to light and in accommodation fairly well. The peripheral field for form was within normal limits; that of color, slightly contracted. There was a definite relative scotoma for white, and frequently it was paracentral. There was a definite central scotoma for red and green. In two of the cases the nasal loss of color value was more marked than the temporal area surrounding the point of fixation. The fundus examination as a rule did not reveal any pathologic changes. In one case, however, the lower temporal quadrant appeared paler than the rest of the nerve.

All the patients received a thorough physical examination. The condition in one was complicated by active diabetes; another presented an infection of the ethmoidal cells. The remainder appeared to be healthy persons. In all of them there was a definite history of moderate use of alcohol and tobacco. Three of them indulged in cheap whisky over a period of from one to five months. They were given a standard preparation of cod liver oil three times daily before meals "on an empty stomach," and five of them were given injections of 4,000 U. S. P. units of vitamin A concentrate intramuscularly twice weekly. Four of the patients recovered vision better than 20/40 within three months after treatment. The other five are still under treatment and are showing improvement of their visual acuity.

It is a known fact that improvement has occurred in typical cases of toxic amblyopia over a period of six months or more when alcohol and tobacco are discontinued and a good diet is adhered to. Nevertheless, it appears that the period of recuperation can be shortened by the addition of vitamin A to the diet. The patient can use some tobacco but no alcohol and still improve over a shorter period than by the usual method prescribed by the ophthalmologists in the past. It is significant that there may be some relation between the repair of the neuro-epithelial layer and the utilization of vitamin A. This observation should also change the conception of toxic amblyopia in that retrobulbar neuritis is a misnomer for this lesion and that it should be considered as an ascending neuritis. The essential lesion is referable to the outer layer of the retina.

VITAMIN B_2 (G)

Many attempts have been made to link the formation of cataracts with disturbances of diet and intestinal disorders. Recently, Day, Langston and O'Brien [2] reported the formation of cataracts in young animals on a diet deficient in vitamin G. Curtis, Hauge and Kraybill [18] also recorded a similar lenticular disturbance produced in young animals on a diet assumed to be low in the amino-acid tryptophan. Jackson, in the department of physiologic chemistry at Yale University, likewise observed similar changes in a few of the animals that he had on an experimental diet deficient in tryptophan. This observation was not recorded, because it was thought that the relation between the tryptophan deficiency and the occurrence of cataract was not sufficiently established. Through the courtesy of Cowgill and Burack, I examined dogs fed on a diet free of vitamin G, but was unable to detect any ocular disturbance. Prompted by the observations of Day, Langston and O'Brien, Guida and I [19] repeated the work.

Animal Experiments.—Twelve young healthy rats free from congenital ocular defects were used. The experiment was started when they were 21 days old and each weighed about 40 Gm. The basal diet was as follows: casein (washed with 60 per cent alcohol), 18 per cent; Osborne and Mendel's salt mixture, 4 per cent; butter fat, 8 per cent; cod liver oil, 2 per cent, and corn starch, containing the alcoholic extract of rice polishings, 68 per cent.

Two control animals received an addition of 400 mg. of yeast to supply vitamins B and G to the diet.

At the end of ten weeks, eight animals remained on the experiment; two were in fair nutritional health, and six were in poor condition. The latter were unable to care for their fur. Their bodies were literally covered with lice; the lids were swollen and congested and glued together with an exudate. Lenticular changes were noted in all of them. The opacities were not confined to any special area of the lens. It is worthy of note that the changes in the lens developed completely within a period of seven days.

The missing vitamin factor was promptly supplied to one of the animals when the opacity of the lens was first noted. At the end of three weeks all signs of cataracts had disappeared in this animal. The remaining five in which the lenticular change was allowed to complete itself resumed their normal growth and maintained health when yeast was supplied but the cataracts were still present.

The experiment was repeated on another series of older animals that were stunted in their growth for sixty days by supplying them only small amounts of yeast. They have been on the diet now for twelve weeks, but no changes in the eyes have been noted. Another group of rats fed on a more highly purified diet than that suggested by Day, without addition of yeast, died before any lenticular changes were manifest.

Comment.—Vitamin G deficiency has been considered by many workers as intimately associated with the complex syndromes of symptoms included under the term pellagra. As yet it is not possible to say definitely that the pellagra-like condition in the rat is the analogue of pellagra in man. The incidence of cataracts is not any more prevalent in pellagra than in any other type of disease. It is significant, however, that cataracts should develop in animals that are on a diet deficient in the so-called pellagra-preventing vitamin G. The question arises whether observations on the albino rat can be interpreted in terms of human lenticular dis-

18. Curtis, P. B.; Hauge, S. M., and Kraybill, H. R.: Nutritive Value of Certain Animal Protein Concentrates, J. Nutrition **5**: 503 (Sept.) 1932.
19. Yudkin, A. M., and Guida, F.: Unpublished experiments.

turbances. It is possible that the so-called congenital cataracts may be produced within the uterus by a maternal diet deficient in vitamin G. An attempt will be made to produce congenital cataracts by a vitamin G deficiency in the mother. It is not far fetched to consider some types of cataract in man to be formed because of the lack of proper assimilation of certain food substances from the intestinal tract that are necessary for the maintenance of the normal metabolism of the lens. At the present stage of our knowledge, we are not justified in attributing the formation of cataracts to the lack of vitamin G alone in the diet. It is possible, however, that the lack of vitamin G in the diet alters the intestinal tract so that the body is unable to furnish the lens with its proper pabulum. Further evidence of a more exacting character is necessary to establish the apparent association of a deficiency in vitamin G and cataract formation.

DIETS POOR IN MINERAL NUTRIENTS

It has been suggested that glaucoma simplex may be due to a low intake of mineral nutrients. No experimental evidence, however, is available to substantiate this view. There are some recorded data that the sodium chloride content of the blood in patients afflicted with glaucoma simplex is below normal. A study that was made in the clinic on the chemistry of the blood in glaucoma simplex is rather suggestive of this point of view, but not enough material is available to make a definite statement to this effect. With these notions as a background, an attempt was made to establish the relationship of a low salt intake to increased intraocular pressure. However, instead of finding glaucoma simplex in this type of dietary deficiency, a picture of proptosis was noted in the following experiments:

Animal Experiments.—Young healthy albino rats 21 days old and weighing about 40 Gm. were placed on the following diet: casein, 18 per cent; butter fat, 9 per cent; lard, 20 per cent; starch, 44.2 per cent; yeast, 8 per cent; cod liver oil, 10 drops; distilled water; iodine in water once weekly; Sure's salt mixture[19a] plus sodium chloride, 0.78 per cent, or McCollum's salt mixture,[19b] 0.5 per cent.

In the course of sixty days it was noted that in about half of the animals prominent protruding eyes developed in which the degree of proptosis changed from day to day. The animals did not grow well, and roentgenograms showed the absence of normal mineral deposition in the bones. There was a definite anemia present. The animals showed marked nervousness and irritability. Several of them chewed up their tails while on this experiment. At the end of sixty days the missing mineral nutrients were added to the diet, whereupon the animals resumed their growth and returned to good health.

Histopathologic changes described by Naffziger[20] in exophthalmos were not observed in the ocular muscles of these experimental animals. Further study of the tissue is being made by a pathologist. There are, however, suggestive changes in the thyroid gland that require a more detailed study and interpretation.

Comment.—I am convinced that glaucoma simplex is not produced by a diet such as has been recorded and is being studied in detail at the Connecticut Agricultural Experiment Station. There is evidence, however, that a condition is being dealt with which might lead to a better understanding of the relation of a diminution of inorganic salts in the diet to the exophthalmos in thyrotoxicosis.

SUMMARY AND CONCLUSION

The foregoing experiments on test animals fed faulty diets show that normal growth and maintenance of good health is interfered with if the experiment is allowed to go beyond the stage where the body is depleted of the essential factor. In addition, a large percentage of the animals on these diets show definite types of ophthalmic lesions produced by changes in the ocular tissue. For example, on a diet lacking vitamin A the secretion of the para-ocular glands is altered to the extent that the epithelium of the conjunctiva and cornea is changed so that destruction of the tissue follows if the missing factor is not added to the diet. Accompanying the external ocular lesion, there seems to be a disturbance of the pigment and the neuro-epithelial layer of the retina, for the animals have a poor dark adaptation. An examination of the tissue in question also bears out this contention.

In the literature are many case reports of persons with similar ocular disturbances who have been cured by taking cod liver oil internally. Clinical experience leads me to believe that diseases of the retina involving the pigment and neuro-epithelial layers are benefited by the introduction of an added amount of vitamin A or its precursor to a well balanced diet. Persons with toxic amblyopia with alcohol and tobacco as causative agents have a shorter period of convalescence; children suffering from photophobia accompanying phlyctenular keratoconjunctivitis regain their ability to face the light much sooner than when ocular medication alone is used; there is also a suggestion that retinitis pigmentosa may also be stayed. Hence, it is worth while studying the effects of vitamin A or its precursor on changes in the outer layer of the retina.

As for the production of lenticular changes when the diet is deficient in vitamin G, further work is required before definitely deciding on the causative agent. Even though the work of Day, Langston and O'Brien has been confirmed by Guida and myself on young animals, a more detailed scrutiny of the diet must be made, particularly in reference to the source of vitamin G.

So far changes in the lens have not developed in older animals that have been stunted in their growth by the lack of B and B_2, even after the animals have been on the diet for three months. It is possible that the intestinal tract of the animals on this diet has been altered to the extent that the necessary substances for normal growth and maintenance of health are not absorbed properly, hence the metabolism of the special organs is interfered with or a toxic substance is introduced into the blood stream. This may act like naphthalin and other poisons in the formation of experimental cataracts. As yet no definite connection has been detected between the dietary disturbances and so-called senile cataract, with the exception of the changes that appear in persons with diabetes. The

19a. Sure, B.: Dietary Requirements for Reproduction: Nutritive Value of Milk Proteins from the Standpoint of Reproduction, J. Biol. Chem. **58**: 681 (Jan.) 1924. Sure's salt mixture consists of the following:

	Gm.		Gm.
Sodium chloride	0.2022	Dipotassium hydrogen phosphate	1.1158
Anhydrous magnesium sulphate	0.3117	Crystallized calcium hydrogen phosphate	1.1165
Crystallized disodium hydrogen phosphate	0.5265	Calcium lactate	0.2896
		Ferric citrate	0.1385

19b. McCollum, E. V.; Rask, O. S., and Becker, J. E.: Study of the Possible Rôle of Aluminum Compounds in Animal and Plant Physiology, J. Biol. Chem. **77**: 753 (May) 1928. McCollum's salt mixture has the following composition:

	Gm.		Gm.
Sodium chloride	146.0	Tetrahydrogen calcium orthophosphate plus water	456.0
Anhydrous magnesium sulphate	225.0	Ferric citrate	100.0
Sodium biphosphate, U. S. P. with water	293.0	Calcium lactate	1,098.5

20. Naffziger, H. D.: Pathologic Changes in the Orbit in Progressive Exophthalmos: With Special Reference to Alterations in the Extra-Ocular Muscles and the Optic Disks, Arch. Ophth. **9**: 1 (Jan.) 1933.

latter alteration of the lens is attributed to repeated changes in the osmotic pressures in the blood and aqueous humor or to the introduction of some unknown substance into the pabulum of the eye which disorganizes the normal metabolism of the lens. It is conceivable that congenital cataracts may come on if the mother is not adequately nourished during pregnancy. Further investigation along similar lines is necessary before a definite understanding of the causation of experimental cataract due to the lack of certain elements in the diet is fully understood.

In the instance of producing prominent eyes in experimental animals on a diet low in salts, a more intricate syndrome is presented.

ABSTRACT OF DISCUSSION

DR. C. S. O'BRIEN, Iowa City: Certain of the symptoms of both vitamin A and vitamin G deficiency are similar; e. g., loss of hair about the lids, edema, serosanguineous secretion from the conjunctival sac, matting together of the lids, and corneal changes. The corneal changes are not exactly alike in that with vitamin A deficiency the corneal surface is dry, oily, covered with fatlike plaques, and may ulcerate, whereas, in vitamin G deficiency most of the pathologic conditions are situated in the anterior stroma layers, and ulceration does not occur. Dr. P. C. Jeans of the University of Iowa has recently made a study of vitamin A deficiency in children. He believes that night blindness is the earliest subjective symptom of vitamin A deficiency. He studied the phenomena of dark adaptation with the photometer. Approximately 10 per cent of the children admitted to the hospital had a mild vitamin A deficiency, as shown by retarded adaptation to darkness. In practically all these cases the hemeralopia soon disappeared after the addition of cod liver oil to the diet. I had not thought of increasing the vitamin A content of the diet as a means of treatment in toxic amblyopia. Most of these patients improve rapidly after complete abstinence from tobacco and alcohol. Dr. Yudkin states that the pathologic changes are situated in the outer layers of the retina. I had believed them to be in the ganglion cell and nerve fiber layers. It pleases me to know that the work of Day, Langston and myself, on changes in the lens with vitamin G deficiency, has been confirmed at Yale. Dr. Yudkin has not mentioned the corneal changes; they resemble an anteriorly placed interstitial keratitis. Contrary to the experience of the author, we were unable to note any clearing of the lens on feeding vitamin G; however, the progress of the process could be stopped at any point by such means. Whether or not the observations on vitamin G deficiency in animals can be interpreted in terms of human lenticular disturbances, I am unable to say. It seems reasonable to think that some congenital cataracts may be the result of such a deficiency. I have thought that perhaps the lens changes in natives of India may be due to some such cause. These people live on starvation rations and the cataracts appear much earlier in life than in our own people.

DR. K. W. COSGROVE, Little Rock, Ark.: I wish to discuss the eye changes in vitamin G (B_2) deficiency. The original work of Day, Langston and O'Brien has been confirmed in experimental animals. It can be taken as proved that animals on a vitamin G deficiency diet will show changes in the lens. In an attempt to show a relationship between vitamin G and the lens changes in so-called senile cataract, fifty patients have been carefully questioned regarding their intake of foods known to be rich in vitamin G. The patients selected had no systemic or local known cause of cataract, such as trauma or diabetes. The average age was 72. Five foods (milk, greens, meat, liver and yeast) were taken as containing the majority of vitamin G in the diet. A study of these fifty patients showed that thirty-two, or 64 per cent, were apparently getting very little vitamin G; seventeen, or 34 per cent, were getting a moderate amount. There were three interesting instances of apparent arrest of cataract following the addition of food rich in vitamin G to their diet. Two of these had remained arrested for two and five years, respectively, following the addition of a large quantity of milk daily, and one was arrested for eighteen months following the addition of a mixture containing liver extract. A study of 125 inmates of the Arkansas Confederate Home for the past six years showed that no person on the balanced diet has developed cataracts to maturity. We have several new ones come to the home every year with early opacities of the lens, but only one of these in six years has come to maturity. Although this preliminary report is small, and no definite statement can be made as to the etiology of senile cataract, several facts are suggested: 1. The majority of the patients with cataract who were studied ate only small amounts of food rich in vitamin G. 2. Persons of similar age on a balanced diet did not develop cataract to maturity in six years.

DR. PAUL L. DAY, Little Rock, Ark.: It can be said that cataract results from a deficiency of vitamin G (B_2). That the cataract is due to a deficiency of a heat-stable vitamin is proved by the fact that these experimental cataracts may be prevented or arrested by autoclaved yeast. It is reasonable to suppose that a deficiency of vitamin G would produce a cataract in human subjects. All species that we have experimented with, from fowls to primates, have responded in that way, and if man did not he would appear to be the exception. It might be argued that no human dietaries would ever be free enough of the vitamin to produce cataract. If the requirement of man were relatively as low as the rat requirement, that would be true. Until more is known about the human requirement for the vitamin, the question cannot be answered. It is known that different species vary widely in the amount of vitamin G necessary to prevent cataract. A very small amount will prevent it in the rat, while chicks will develop cataract even with large amounts of vitamin in the diet. Vitamin G therapy might well be used in incipient cataract cases. It would do no harm, and it would greatly benefit the patient in other ways. I should like to offer a word of caution with respect to the interpretation of clinical observations. Vitamin G can reasonably be expected to be of value in the treatment only if the cataract is due to a deficiency of the vitamin. There may be several causes of senile cataract; in that case one should expect arrest only in such cases as are due to a vitamin deficiency. If the nutritional history of a patient suggests that a dietary deficiency could not be an etiologic factor, such vitamin therapy would be useless.

DR. LAURA A. LANE, Minneapolis: One must be careful in interpreting observations in animals and applying them to human beings. In many instances, animals do not live under the same conditions or eat the same food as human beings. For example, work has been done on feeding rabbits high fat or high protein diets. High blood pressure and vascular changes resulted. The rabbit is not a carnivorous animal; therefore proper conclusions cannot be drawn. In the same way, while vitamin A and B are important factors, there are other elements in the diet, such as the mineral salts; and the body metabolism must be considered. McCollum, Simonds and Becker have shown in addition to the lack of vitamin A that the lack of vitamin B and an unfavorable salt mixture can cause ophthalmia. The practical clinical points are what must be worked toward now. Accurate records of patients must be kept. Physicians must try to put the knowledge that is now coming from the enormous literature—particularly in biochemical articles—to some practical use in daily work. Many patients today are on limited diets; a little extra strain or an infection upsets them and troublesome eye symptoms appear. I have had experience with vitamin A and B in retinitis pigmentosa as well as in patients who complain of their eyes tiring easily. The symptoms of such patients are improved from an increased amount of food containing vitamin B and A, such as liver, plenty of green vegetables and a rather high fat diet of cream. Vitamin B has a good effect on the intestinal tract. It increases peristalsis. This is desirable in many eye cases. Vitamin B has a good effect on the proteins. Nelson has shown that it mitigates the ill effects of a high protein diet. The problem of the vitamins is highly complex and requires much more clinical and experimental work.

DR. ARTHUR M. YUDKIN, New Haven, Conn.: It is true, as Dr. Lane points out, that many of the ocular changes produced in animals on diets deficient in vitamins have no analogue

in man. Nevertheless, the therapy that I propose is not harmful to the patient. I am aware that diet alone may not cure the ocular disease directly, but it is a known fact that a well balanced diet supplemented by the vitamins enriches the body by way of the intestinal tract, so that an injured organ can better defend itself. Recently Dr. Adams and her collaborators showed that naphthaline cataracts were produced much sooner in rabbits fed on a diet of oats and carrots than on one supplemented with cabbage. Today it is known that cabbage is rich in vitamin G. Is it not possible that the addition of vitamin G delayed the formation of cataracts in these rabbits fed naphthaline?

IMPROVEMENT IN EXPERIMENTAL DIABETES FOLLOWING THE ADMINISTRATION OF AMNIOTIN

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Houssay and Biasotti [1] clearly demonstrated that, if the hypophysis was previously removed, the glycosuria following complete pancreatectomy was markedly diminished. These animals with both glands removed excreted only from 0.05 to 0.89 Gm. of dextrose per kilogram a day, while controls with the pituitary intact excreted from 2 to 4 Gm. per kilogram after the pancreas was removed. Furthermore, the animals survived much longer than pancreatectomized animals. We confirmed some of these observations in an earlier report.[2] Although it would not seem desirable to remove the hypophysis for the treatment of diabetes, the possibility exists that the excretion of the gland might be suppressed and the diabetes improved. We shall report the details of an attempt to suppress the pituitary in pancreatectomized dogs.[3]

Considerable evidence has appeared to indicate that administration of estrogenic substance may suppress the sex principle in the pituitary. It was our intention to see whether the postulated diabetic principle in the pituitary might likewise be suppressed. The attempt apparently has been successful, but it is necessary to issue a warning against the clinical application until more of the effects of the sex hormone are investigated.

RESULTS OF EXPERIMENTS

Amniotin was used as a source of the estrogenic substance, since it was available in oil solution, which should give a slower, more uniform absorption. Four female dogs weighing about 10 Kg. were injected subcutaneously daily with 200 rat units of amniotin. In three of these animals, the injections were carried out for three weeks prior to extirpation of the pancreas, while in the fourth the pancreas was removed first. The urines were collected in a bottle to which toluene was added as a preservative. The twenty-four hour specimens were analyzed for dextrose by Benedict's method.

After removal of the pancreas in the three animals receiving amniotin, the wounds healed promptly, the animals lost some weight but the glycosuria was only mild. The maximum glycosuria in one animal while receiving 500 Gm. of meat was 1.5 Gm. per kilogram. This dog lost her appetite and died three weeks after pancreatectomy. No pancreatic tissue was found at autopsy, although no histologic work was done. The other two animals showed less glycosuria and fell within the range that Houssay reports for completely hypophysectomized dogs. They both lost some weight but at the end of three weeks were lively and ate their diet of 500 Gm. of meat daily. All the animals received 50 cc. of dog's pancreatic juice [4] on alternate days by stomach tube to aid digestion. During this period the injection of amniotin was continued, but at the end of three weeks the injections were stopped. Both animals developed a severe glycosuria in a few days, one excreting 3 Gm. per kilogram while the other excreted 4 Gm. per kilogram, the upper limit for pancreatectomized dogs in Houssay's controls. Our controls agree with his report. When severe glycosuria developed in these animals on the withdrawal of amniotin, it seemed clear that the pancreatectomy had been complete and that amniotin had influenced carbohydrate metabolism.

The next point investigated was whether amniotin could reduce glycosuria if the pancreas was removed first. Another animal was pancreatectomized and the glycosuria found to be 3 Gm. per kilogram. This animal and the two referred to previously were put on 20 units of insulin daily and a diet of 500 Gm. of meat plus enough bread to produce a daily glycosuria of from 10 to 12 Gm. When they were well standardized (for ten days), the injection of amniotin (200 rat units daily to each) was started. The glycosuria soon diminished and insulin and bread were withdrawn from one dog on the eighth day and from a second dog on the ninth day after amniotin was started. These two dogs were the ones previously used. They are both alive now, thirteen days after insulin was stopped and, although they are excreting a little more sugar than when they previously received amniotin, their glycosuria is only one-half to one-third what it was when they received no amniotin on the same diet. The third animal's glycosuria has been entirely abolished on the same diet and insulin dosage, which previously gave a glycosuria of from 10 to 12 Gm. These results clearly show that pancreatic glycosuria can be markedly influenced by the injection of amniotin and that the life of the pancreatectomized animal is prolonged.

A fifth animal was injected with anterior pituitary-like principle from pregnancy urine [5] (0.5 cc. twice daily) for three weeks prior to pancreatectomy (the theory in this case being that the corpora lutea might suppress the pituitary). After removal of the pancreas, the glycosuria reached only 0.70 Gm. per kilogram, which is within the range for completely hypophysectomized dogs in Houssay's series. A severe infection developed at the site of injection, and the animal was killed on the tenth day after pancreatectomy. No residual pancreatic tissue was found.

COMMENT

Although these experiments clearly show that amniotin will modify glycosuria after removal of the pancreas, the explanation is not so clear. Tentatively, the theory is advanced that the pituitary has been suppressed, since the estrogenic substance has been found to suppress the sex principle in the pituitary. If this interpretation is correct, it would indicate that the suppression is almost complete, since the glycosuria

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Dr. Barnes and Dr. Nelson are National Research Council fellows.

1. Houssay and Biasotti: Endocrinology **15**: 511 (Nov.-Dec.) 1931.
2. Regan, J. F., and Barnes, B. O.: Science **77**: 214 (Feb. 24) 1933.
3. A preliminary report was made before the Society of Endocrinologists in Milwaukee, June 12, 1933.
4. We are indebted to Dr. L. R. Dragstedt for this pancreatic juice.
5. Dr. Oliver Kamm furnished this.

following pancreatectomy was within the range for completely hypophysectomized dogs. It might be dangerous to suppress the pituitary completely, since other organs atrophy following hypophysectomy. This is especially true of the suprarenal cortex, which atrophies if the pituitary is removed. Before attempting to treat clinical diabetes by pituitary suppression, it will be necessary to determine whether the influence on carbohydrate metabolism can be accomplished without serious injury to other organs. This work is now under way and, until the studies are complete, the clinician is advised not to try suppression therapy on his patients.

SUMMARY

1. By injecting amniotin into depancreatized dogs, the glycosuria can be markedly reduced.

2. The animal's wounds heal promptly and life is prolonged, although a gradual loss in weight occurs.

3. A possible explanation is that the pituitary has been suppressed.

4. The clinician is advised not to try this therapy until further studies are made, since the suprarenal cortex may atrophy.

Clinical Notes, Suggestions and New Instruments

PARTIAL PROLAPSE OF THE CECUM, ILEUM AND APPENDIX THROUGH A PREFORMED OPENING IN THE GREATER OMENTUM

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Prolapse of the small intestine through a preformed opening in the greater omentum is an infrequent occurrence. According to the literature, herniation of the large intestine through such an abnormal opening is an extremely rare finding at operation. Including his own, Martzloff [1] found in the literature only sixteen cases of preformed greater omental apertures through which an intestinal loop had prolapsed. In only one of the sixteen was the large intestine the portion of bowel involved. This case, originally reported by Gorski,[2] was included by Martzloff only after some hesitation because of the belief that the opening in the omentum was of inflammatory origin rather than a simple tear. The rareness of the occurrence seems to justify recording this case, which is believed to be the seventeenth of its kind.

REPORT OF CASE

History.—M. L. F., a Negro girl, aged 14 years, was brought to the University of Virginia Hospital, May 19, 1929. She complained of pain in her abdomen of ten days' duration. May 10, she was seized by a pain in the epigastrium, had a chill, became nauseated and vomited. The pain shifted soon to the right lower quadrant of the abdomen. In twenty-four hours, however, she had improved, having taken a purgative in the meantime. The pain subsided to a dull ache only to return after a week with added severity and much nausea and vomiting. Her family physician was called and sent her to the hospital because he suspected acute appendicitis.

The family history was unimportant. The past history indicated that she had been a healthy child, having had no serious illnesses or operations. Her menses had commenced two months previously. The patient was unmarried.

Examination.—She was fully developed and well nourished, with a dry skin and an anxious look on her face. Her temperature was 99.6 F., the pulse rate 100, and the respiratory rate 24 per minute. The systolic blood pressure was 115, the diastolic 88 mm. of mercury. The eyes, ears, nose and throat were normal. The teeth were carious and dirty. No glands were palpable. The heart and lungs were apparently normal. The abdomen, which was scaphoid, was rigid throughout. There was marked tenderness in the right lower quadrant at McBurney's point. No mass could be demonstrated. The flanks were tympanitic. The pelvic examination revealed extreme tenderness high up in the right fornix with suggestive evidence of a mass. The patellar and other reflexes were normal.

The urine contained an occasional white blood cell but was otherwise normal. The hemoglobin was 90 per cent (Dare); the red blood cells numbered 4,260,000 and the leukocytes, 11,000. The differential count made from a blood smear showed 87 per cent polymorphonuclear leukocytes, 12 per cent lymphocytes and 1 per cent basophilic leukocytes. The Wassermann reaction was negative. The stool contained no blood.

A diagnosis of probable acute appendicitis with rupture and localized peritonitis was made and operation advised.

Partial prolapse of cecum, ileum and appendix through a preformed opening in the omentum.

Operation.—Under nitrous oxide, oxygen and ether anesthesia, the patient's abdomen was entered through a low right rectus incision, the muscle being split. As the peritoneal cavity was opened, a small amount of blood-tinged, cloudy fluid escaped. Two loops of intestine, which were congested and discolored, presented themselves. They were covered by a deeply congested omentum and had the appearance of an obstructed bowel. On further examination an oval, smooth opening in the greater omentum, about 3 by 2 cm., was found between two large vessels, situated about 5 or 6 cm., from the lower margin of the omentum on the right side. Through this opening, parts of the cecum, the distal portion of the ileum and the appendix had prolapsed and were constricted by the surrounding omental ring, as shown in the illustration. The appendix, constricted by the ring in its midportion, presented the picture of acute inflammation with a gangrenous, discolored tip covered with fibrin and adherent to the cecum. The hernia had almost completely obstructed the bowel and had caused distention, dark red discoloration and edema but no gangrene. There were some plaques of fibrin scattered over the serosa of the intestine both above and below the aperture. There was also some distention of the ileum behind the point of obstruction. As soon as the omental ring had been divided and the incarcerated bowel freed, the dark red of the intestine disappeared and the normal color returned. Application of moist heat was followed by the resumption of peristalsis. The portion of omentum, which had acted as the constricting band, was

From the Department of Surgery and Gynecology, University of Virginia Department of Medicine.

1. Martzloff, K. H.: Prolapse of the Intestine Through a Preformed Opening in the Great Omentum, Surg., Gynec. & Obst. **40**: 899 (May) 1930.

2. Gorski, K., quoted by Martzloff.[1]

excised and the margin sutured with fine catgut. Examination of the remaining portion of the great omentum revealed no other aperture. The appendix was delivered through the incision and removed after the meso-appendix was divided and ligated between clamps. The stump of the appendix was phenolized and buried with a purse-string suture of silk. The bowel was examined for some distance both proximal and distal to the cecum and seemed normal. No other abnormality was observed in the abdomen. The incision was closed without drainage.

The appendix was described as follows in the pathologic report: "The appendix, 4.5 × 1 cm., is congested, dark red and covered with fibrin. The wall is thick and the mucous membrane edematous. The lumen contains feces and pus. Microscopically there is a thickened serous layer with hemorrhage and many polymorphonuclear leukocytes. There is edema of the muscularis with necrosis of the mucosa in some areas. There is an acute inflammatory exudate and necrotic débris in the lumen. Diagnosis: Appendicitis, acute, with gangrene and localized peritonitis."

Postoperative Course.—The postoperative course of the patient was uneventful; the highest temperature was 100.8 F., recorded on the second day. She was discharged from the hospital, June 6, eighteen days after the operation. Her condition at that time was excellent. The wound had healed by first intention. Jan. 6, 1930, she was well and going to school.

COMMENT

The case presented several interesting features, the most outstanding one being that the appendix, constricted in its midportion and gangrenous, gave rise to symptoms of acute appendicitis while there were few symptoms of intestinal obstruction, although definite mechanical obstruction of both the small and large intestine was found at the time of operation. In this respect it closely simulated the case reported by Martzloff.

The occurrence of this condition in a person aged 14 years is apparently unusual for, among the patients whose ages have been recorded in the reports, there is only one younger individual, namely, Curran's patient.[3] The present case adds additional evidence that the age incidence of the disease is unlimited.

The location of the opening in the omentum and the absence of any history of previous trauma or operation leaves very little doubt that it was a true preformed opening and not the result of inflammation or a tear. No definite statement regarding the time of formation of the opening seems justified. It seems not unlikely, however, that the opening might have been congenital. The propensity of the omentum to surround an acutely inflamed appendix may have brought the opening in the omentum into relationship with the primarily inflamed appendix, which slipped partly through the opening together with the adjacent portions of the cecum and terminal ileum. This would explain why a portion of the large intestine was involved, whereas generally the small intestine alone becomes ensnared in the abnormal opening.

SUMMARY

The case herein reported is believed to be the seventeenth on record of prolapse of the intestine through a preformed opening in the omentum. Partial prolapse of the cecum, ileum and appendix through a preformed opening in the greater omentum, with symptoms simulating acute appendicitis, occurred in a Negress, aged 14 years. By operation, the intestine was liberated and an acutely inflamed appendix was removed. The patient recovered after an uneventful convalescence.

Buxton Clinic.

3. Curran, J. W., quoted by Martzloff.[1]

Spectroscopic Test for Lead in Blood.—The spectroscopic test for the presence of lead in the circulating blood is so recent a development and our experience with it is so limited that a proper evaluation of its usefulness is not possible. A negative spectroscopic test of the blood for lead proves that lead is not circulating and indicates, therefore, that lead poisoning is not occurring. A negative test is certainly of the greatest usefulness. A well marked positive test means that lead is circulating in the blood and indicates either that lead poisoning is still going on or has occurred recently.—Park, E. A., Jackson, D., Goodwin, T. C., and Kajdi, L., *J. Pediat.* **3**:265 (Aug.) 1933.

Special Article

ENCEPHALITIS IN ST. LOUIS

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During the five weeks from August 7 to September 10, inclusive, there have been reported in St. Louis City and St. Louis County 656 cases of encephalitis. It appears that the epidemic incidence for this area will not exceed a rate of about one case per thousand of population, and the reported extension of the infection to other places has thus far been remarkably slight. The case fatality rate will be about 20 per cent.

Only 13 per cent of the cases have occurred among the 25 per cent of the population which is under 15 years of age, and 23 per cent of the patients have been in the age group 15 to 34 years, which comprises 35 per cent of the total population. The recovery rate in these two age groups has been relatively high, with about half as many deaths in proportion to the number of cases as in the other two age groups. Twenty-nine per cent of the cases have been among the 27 per cent of the population that is from 35 to 54 years old. The age group over 55, comprising only 13 per cent of the population, has had 35 per cent of the cases, and the case fatality in this oldest age group has been about double the rate for the other age group. There appears to be no racial or sexual predilection save the usual preponderance of males in the age group under 15.

Clinically, this outbreak has resembled other epidemics of encephalitis, but especially that described as occurring around the Inland Sea of Japan in 1924.[1] It has differed from most other outbreaks in that ophthalmoplegia, ptosis and strabismus are much more uncommon, while demonstrable meningeal involvement is practically uniform in the recognizable cases; as observed thus far, recovery has been more often prompt and complete. The onset is usually fairly sudden, that is, not prolonged over more than three days to reach a definite development, with general malaise and a febrile disturbance, often with a headache. Vomiting and other gastro-intestinal symptoms are not uncommon. Evidence of cerebral involvement may be the first indication of the disease. Pronounced somnolence is not the rule; the patients are apathetic, mentally and physically sluggish, stuporous or comatose rather than somnolent; they may be delirious enough to require restraint but are not noisy. The neck becomes slightly or moderately stiff at some stage in the well developed disease, and the cells in the spinal fluid are above normal in number, rarely exceeding a few hundred, chiefly lymphocytic. The lumbar puncture often relieves the headache permanently. With the fever there is usually a moderate leukocytosis. Some of the chief reflexes and the superficial reflexes, such as the abdominal, are absent and vary from day to day. Actual paralyses occur but are typically transient. The response of the great toe is dorsal extension on plantar stimulation (Babinski) or on firm downward rubbing of the tibial group of muscles (Oppenheim) in many cases. Tremors are frequent; and the muscles often tend to be somewhat rigid. Difficulty

From the Oscar Johnson Institute, Kingshighway and Euclid Avenue, St. Louis.

1. Kaneko, R.: Japan M. World **5**: 237 (Sept.) 1925. Kaneko, R., and Aoki, Y.: Ergebn. d. inn. Med. u. Kinderh. **34**: 342, 1928.

in feeding and the danger of bedsores, as well as the maintenance of isolation, make hospitalization advisable. Painful sensations, as of the abdomen or legs, are not infrequent in the early stages. The fever may last only three days, or it may be prolonged more than two weeks. The symptoms tend to improve with the subsidence of the fever, but not uniformly. The incubation period is probably a week or more.

The pathologic lesions are similar in nature to those found in other epidemics of encephalitis (not the postinfectious demyelination encephalitis) but are more diffuse through the brain and meninges without special localization in the basal ganglions and brain stem. Before the St. Louis Medical Society, September 1, Dr. H. A. McCordock demonstrated inclusion bodies that had been found in the kidneys in about half the cases examined by Dr. Margaret G. Smith.

Epidemiologic studies are being conducted by the United States Public Health Service in connection with the health departments concerned, and insect transmission experiments, particularly with mosquitoes, are being carried out not only by a unit of the Public Health Service group under Surgeon L. L. Williams, Jr., but also by Major James S. Simmons, director of laboratories, Army Medical School, and Major V. H. Cornell, curator of the Army Medical Museum at Washington. Drinking water and milk as major factors in the spread of the disease appear to be excluded, but the incidence has been especially high in the suburban districts. During the early part of the epidemic the rate in St. Louis County was eleven times that in St. Louis City. Connected cases and cases in the same family have been occurring nearly as frequently as would be expected in a poliomyelitis epidemic of similar intensity and distribution. The precautions taken are similar to those used in poliomyelitis, including isolation of the patients for three weeks from the date of onset, and screening in addition.

During the early part of the epidemic a Metropolitan Health Council was formed by the local health officers of the St. Louis area, and committees were appointed on administrative control, including epidemiologic records, and on research. Dr. R. S. Muckenfuss, assistant professor of medicine in Washington University School of Medicine, was made chairman of the latter committee, which consisted of representatives of St. Louis University, Washington University, and the various hospitals in which there were cases of the disease. At a meeting of the Metropolitan Health Council, September 8, a report from this committee was made on attempts to transmit encephalitis to monkeys, by Dr. Muckenfuss, Dr. Charles Armstrong, surgeon, U. S. Public Health Service, and Dr. H. A. McCordock, associate professor of pathology in Washington University School of Medicine, as follows:

> Since the beginning of the outbreak of encephalitis in St. Louis, numerous animals of different species have been inoculated with material of several kinds from patients suffering with this disease. Six monkeys inoculated with material from five different patients dying of encephalitis have shown fever beginning with the eighth to the fourteenth day after inoculation. Coincident with the rise of temperature, tremors, incoordination and weakness have appeared. Three of these animals have been submitted to pathological examination, and their central nervous systems showed lesions consistent with the picture found in human epidemic encephalitis. Reinoculation of material from these monkeys into normal monkeys is also progressing. While these results are encouraging, many weeks' work has yet to be done before it can be stated that the human disease has been established in animals.

The cooperation of all concerned, including the Health Department of the City of St. Louis, the Missouri State Health Department, St. Louis University and Washington University, as well as the medical profession and the communities concerned, offer an opportunity unique up to this time for the study of this disease. It is hoped that results to some extent commensurate with the opportunity may be forthcoming.

Extension of the disease from one case directly to another, when the cases are recognized and precautions are taken, is unusual. The early recognition of the disease and the reporting of cases to the proper health authorities are therefore preventive measures peculiarly the physician's own.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

ANTIRABIC VACCINE (See New and Nonofficial Remedies, 1933, p. 371).

United States Standard Products Company, Woodworth, Wis.

Rabies Vaccine-U. S. S. P. (Semple Method).—(See New and Nonofficial Remedies, 1933, p. 374). Also marketed in packages of seven syringes, each containing one dose of 2 cc., and in packages of fourteen vials each containing one dose of 2 cc. with syringe.

IPRAL (See New and Nonofficial Remedies, 1933, p. 89). The following dosage form has been accepted:

Ipral Tablets, ¼ grain.

ORGANIC LUETIN NOT ACCEPTABLE FOR N. N. R.

Report of the Council

The Council has authorized publication of the following report. When the final statement of the Council's action was transmitted to the Abbott Laboratories, the firm replied that after careful consideration of the Council's action it had been decided not to market Organic Luetin. The Council decided that the report of its consideration should be published on account of its academic interest and voted an expression of appreciation for the attitude of cooperation shown by the firm in its decision not to market Organic Luetin.

PAUL NICHOLAS LEECH, Secretary.

Organic Luetin (The Abbott Laboratories) is stated to be an extract of syphilitic testicular tissue of rabbits infected with the Nichols strain of Spirochaeta pallida. It is proposed for diagnostic use as a skin test "in acute, chronic and congenital syphilis, especially where the Wassermann reaction yields falsely negative results." A control solution, which is an extract of normal testicular tissue of the rabbit, is supplied.

At one time the Council accepted a similar luetin preparation, but in 1922 this was omitted because of lack of confirmatory evidence of its value and because the market supply had been reported to be unreliable (Reports of the Council on Pharmacy and Chemistry, 1922, p. 49).

As evidence for the value of Organic Luetin the referee considered an article, "The Interpretation of the Dermoluetin Reaction of Syphilis, Experience with the Kolmer Organic Extract," by D. Truett Gandy, from the clinic of Dr. Jay F. Schamberg and the Research Institute of Cutaneous Medicine. Dr. Gandy presents a moderately good survey of the literature in regard to luetin. He then goes on to make a report on the application in 204 syphilitic patients, the test being taken as a routine measure. These cases were grouped into 10 patients with primary and secondary syphilis; 140 patients with so-called latent syphilis; a third group comprising 54 subjects with congenital syphilis; and 7 patients with cerebrospinal syphilis.

Positive reactions were obtained as follows: primary and secondary syphilis, 10 per cent; late and latent syphilis, 34.2 per cent; congenital syphilis, 31.1 per cent; cerebrospinal syphilis, 28.5 per cent; and cardiovascular syphilis, 11.1 per cent. It was also found that in the group of forty-eight patients with late and latent syphilis who gave positive reactions to luetin, the serum of 22.2 per cent gave negative reactions to the Wassermann-Kahn reaction. In the group of seventeen patients with congenital syphilis, this percentage was 25. Nothing is said in this paper, however, as to the number of positive reactions found in normal cases. At least, this should have been mentioned. Moreover, no mention is made as to whether any of these patients were getting iodides, so that one rather hesitates to take too much for granted from this short period that is reported.

Comparison of Luetin and Serum Reactions in Relation to Type of Syphilis

	Cases	Positive Serum Reactions*	Positive Organic Luetin Reactions
Latent syphilis	32	26	4
Early active syphilis:			
Active primary and secondary syphilis	20	20	0
Meningovascular neurosyphilis	2	2	0
Iridocyclitis	2	2	2
Late active syphilis:			
Neurosyphilis	54	45	13
Cardiovascular syphilis	18	16	2
Tertiary syphilis of skin	5	5	5
Hepatic syphilis	4	4	1
Charcot's joint	2	2	0
Congenital syphilis:			
Interstitial keratitis	5	3	5
Juvenile paralysis	1	1	1
Asymptomatic syphilis	2	2	1

* Both Wassermann and Kline reactions were positive.

The Council's referee reported that he had been following the subject of the luetin test with a great deal of interest for the past few years and gave the following as the conclusions that he has arrived at at present: It is apparently an allergic state (*umstimmung*) of the skin, developed best in old syphilis though occasionally sufficiently developed quite early in a case of syphilis. In employing this test the physician must realize that he is dealing with a nonspecific reaction—it is not necessarily evolved only by the use of extract of Spirochaeta pallida; one may even get a reaction from the local injection of sodium glycocholate, emulsion of normal and pathologic skin, agar, thyroid, gelatin, starch, and a variety of other substances. Moreover, patients, under treatment with potassium iodide, potassium nitrate, bromides and inunctions of mercury may give a nonspecific reaction. Positive reactions have been noted in some normals; thus a positive luetin test in itself is insufficient evidence on which to base a diagnosis of syphilis. It is probable that this allergic state (*umstimmung*) of the skin persists longer than the positive serologic reaction—at least longer than the Wassermann reaction. Probably this is the only real excuse for employing the test. In that group of old cases under therapy, potassium iodide and allied salts being eliminated, all serologic tests may have disappeared though the luetin test may still be positive. Under such circumstances it might have a small value as a criterion of further benefit from treatment—when it became negative. The test might have doubtful value in certain old suspected cases of syphilis with questionable physical manifestations, questionable history and negative serologic reaction. A positive diagnosis under such conditions should, however, be arrived at only after very careful and painstaking study at the hands of an expert.

After consideration of the referee's report, the Council held Organic Luetin unacceptable for New and Nonofficial Remedies because of lack of sufficient evidence for its value and safety and because further experimental work is required before its general use is to be recommended.

A report of the Council's consideration was sent to the Abbott Laboratories, and as a result the firm expressed its desire to withdraw its application for consideration of the product by the Council. The firm was informed that it is not the custom of the Council to permit withdrawal of such application and in the end the firm stated that, pending the outcome of experimental work being carried on, the advertising and promotion of the product would be discontinued and no further quantities would be manufactured. The firm has adhered to this agreement and the Council desires to express its appreciation of the firm's attitude in this matter.

Work has recently been done on Organic Luetin by Dr. John Ambler of the Department of Dermatology and Syphilology of the Western Reserve University, the Abbott Laboratories having kindly supplied generous portions of the luetin for these examinations. He has made examination of 500 patients, including both syphilitic and nonsyphilitic persons; 359 were proved to be nonsyphilitic and 141 syphilitic. Dr. Ambler's results are given in the accompanying table.

In no instance did the administration of iodides or bromides in nonsyphilitic patients provoke a true positive luetin reaction; instead, ingestion of iodides apparently caused production of troublesome pseudoreactions in both syphilitic and nonsyphilitic subjects. The reactions seemed to be most often positive in that phase of syphilis in which additional diagnostic aids are least needed; namely, active tertiary syphilis. Gummas of the skin are usually comparatively easy to diagnose, while, in conditions such as syphilitic aortitis, in which additional diagnostic measures are urgently needed, the luetin reaction was of little or no value. In early syphilis it was of no help; this has been often noted before. In iridocyclitis and interstitial keratitis it is true that the organic luetin reaction seems to have a definite place as a diagnostic aid. In syphilis of the central nervous system, in which a positive test would be more desirable, the value of the test was far below that of serologic examination.

In consideration of the further work of Dr. Ambler, the Council reaffirmed its previous decision declaring Organic Luetin unacceptable for New and Nonofficial Remedies because of lack of sufficient evidence for its value and safety, and authorized this statement of its consideration for publication.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. RAYMOND HERTWIG, Secretary.

EXPRESSION OF APPRECIATION TO CONSULTANTS WHO HAVE ASSISTED THE COMMITTEE

During the past year a number of authorities in their respective scientific fields were consulted on questions of moment before the Committee arising out of its regular business. In recognition of the helpful cooperation and valuable assistance given, the Committee has voted to express publicly its appreciation by publishing the names of those who in this manner and without remuneration have gladly contributed of their time, experience and knowledge to the benefit of the Committee in its public welfare and health work.

The Committee is officially thanking the following who have served as consultants:

Anderson, William E., M.A., research assistant, Department of Physiological Chemistry, Yale University.

Baldridge, C. W., M.D., associate professor of theory and practice of medicine, State University of Iowa College of Medicine.

Boyd, J. D., M.D., associate professor, Department of Pediatrics, State University of Iowa College of Medicine.

Cooke, J. V., M.D., associate professor of pediatrics, Washington University School of Medicine, St. Louis.

Cowgill, George R., Ph.D., associate professor, Department of Physiological Chemistry, Yale University.

Darrow, D. C., M.D., assistant professor of pediatrics, Yale University School of Medicine.

Eliot, Martha M., M.D., chief, Division of Maternity and Infancy, United States Children's Bureau; associate clinical professor of pediatrics, Yale University School of Medicine.

Fisher, Harry J., Ph.D., assistant chemist, Connecticut Agricultural Experiment Station.

Rowntree, Jane I., Ph.D., professor of nutrition, Department of Home Economics, University of Washington.

Sherman, Prof. Henry C., Ph.D., Sc.D., chairman of the Department of Chemistry, Columbia University, New York.

Smith, Arthur H., Ph.D., associate professor, Department of Physiological Chemistry, Yale University.

Stearns, Genevieve, Ph.D., research associate professor, Department of Pediatrics, State University of Iowa College of Medicine.

RULE GOVERNING LABELS AND ADVERTISING SUBSEQUENT TO ACCEPTANCE

Paragraph 9, page 9, of the Rules and Regulations, February, 1933, has been amended by substitution of the following paragraphs:

Subsequent to acceptance, sponsors of accepted foods are obligated to furnish the Secretary with one copy of proof of all pieces of new advertising, including leaflets, booklets, newspaper and magazine advertisements, radio statements, billboard and window displays, etc. This material shall be provided at the time of its preparation and may be forwarded unaccompanied by letter of transmission. It will not be necessary to await criticism of the advertising before it is promulgated to the public. The advertising will be acknowledged only when it does not comply with the requirements of the Committee. It is recommended that elaborate and costly advertising intended for circulation for a long time be submitted for approval before it is printed.

Those responsible for advertising for accepted foods should familiarize themselves thoroughly with the Rules and Regulations and General Committee Decisions. New types of claims not passed on by the Committee at the time of acceptance shall not be used without the consent of the Committee. The labels of accepted foods shall not be changed in any manner without first sending a proof of the new label to the Secretary. These proofs will not be acknowledged, provided they are satisfactory.

Noncompliance with these requirements shall be sufficient reason for withdrawal of acceptance.

BOOKLET "GENERAL COMMITTEE DECISIONS ON FOODS AND FOOD ADVERTISING"

Copies of the July, 1933, edition of the booklet "General Committee Decisions on Foods and Food Advertising," including all decisions adopted by the Committee up to date of issue, will be furnished without charge on request addressed to the Secretary.

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

McCORMICK'S BEE BRAND GINGER
McCORMICK'S BEE BRAND WHOLE GINGER

Manufacturer.—McCormick and Company, Inc., Baltimore.

Description.—Washed and dried decorticated ginger root (rhizome of Zingiber officinale Roscoe); ground and unground.

Manufacture.—Fully grown ginger roots are harvested after the plant withers, are cleaned of dirt, the leaves and stalks are cut away, and the roots are submerged in boiling water for ten minutes to prevent germination. The outer epidermal layers are more or less completely removed by scraping to facilitate drying in the sun, the roots being turned over frequently. The drying takes about ten days, the moisture loss being approximately 70 per cent. The dried root is sorted, exported in burlap bags, and packed whole or ground in cartons or tins at the company's packing plant.

Analysis (submitted by manufacturer).—

	per cent
Moisture	9.1
Cold water extract	14.0
Total ash	5.1
Ash soluble in cold water	2.7
Acid insoluble ash	0.3
Volatile ether extract	2.0
Nonvolatile ether extract	4.3
Protein (N × 6.25)	7.7
Starch	52.2
Crude fiber	4.3
Carbohydrates other than crude fiber (by difference)	67.5
Calcium oxide (CaO)	0.21

Claims of Manufacturer.—Conforms to the respective United States Department of Agriculture standards.

GIBSON FINEST TOMATO JUICE

Manufacturer.—Gibson Canning Company, Gibson City, Ill.

Description.—Tomato juice seasoned with salt; retains in high degree the vitamin content of tomatoes.

Manufacture.—Fresh, vine ripened tomatoes are flumed into a bath and rotary washer. Selected stock is removed from the sorting conveyer, cored, and heated in a housed conveyor containing steam; the tomatoes are discharged into a hopper and machine cut in a steam atmosphere. The juice is expressed in a screw conveyer surrounded by steam; the screw is hollow and kept hot with steam. As a result of the heat, the air is driven off during the preparation of the juice, which is discharged from the press at 93 C. into the bottom of tanks to avoid incorporation of air. The juice is seasoned with salt, canned hot, and processed at 100 C. for from fifteen to thirty minutes.

Analysis (submitted by manufacturer).—

	per cent
Moisture	93.5
Total solids	6.5
Ash	1.2
Sodium chloride (NaCl)	0.8
Fat (ether extract)	0.1
Protein (N × 6.25)	1.0
Reducing sugars as invert sugar	3.2
Sucrose	none
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	3.4
Titratable acidity as citric acid	0.6

Calories.—0.2 per gram; 6 per ounce.

Vitamins.—The method of preparation and packing are efficient for protecting the natural vitamin values.

Claims of Manufacturer.—This tomato juice is a good source of vitamins A and B and an excellent source of vitamin C. Especially prepared for table use and as a vitamin C supplementary food for infant feeding.

CLAPP'S ORIGINAL PUREE OF PRUNES

Manufacturer.—Harold H. Clapp, Inc., Rochester, N. Y.

Description.—Strained cooked prunes. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacture.—California pitted prunes are soaked in water and strained in an atmosphere of steam, which softens the fruit and excludes air. The strained material is subsequently treated as described for Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

Analysis (submitted by manufacturer).—

	per cent
Moisture	79.0
Total solids	21.0
Ash	0.7
Fat (ether extract)	1.2
Protein (N × 6.25)	0.7
Crude fiber	2.0
Carbohydrates other than crude fiber (by difference)	16.4

Calories.—0.8 per gram; 23 per ounce.

Vitamins and Claims of Manufacturer.—See Clapp's Original Baby Soup (THE JOURNAL, June 24, 1933, p. 2011).

SNOW WHITE PATENT FLOUR (BLEACHED)

Manufacturer.—Minot Flour Mill Company, Inc., Minot, N. D.

Description.—A hard spring wheat patent flour; bleached.

Manufacture.—Selected hard spring wheat is cleaned, washed, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-ninth ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (four-tenths ounce per 196 pounds).

Claims of Manufacturer.—For bread baking.

CENTRELLA BRAND EVAPORATED MILK

Packer.—The Page Milk Company, Merrill, Wis.

Distributor.—Central Wholesale Grocers, Inc., Chicago.

Description.—Canned, unsweetened evaporated milk, the same as Page Evaporated Milk (THE JOURNAL, May 30, 1931, p. 1872).

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 16, 1933

ENCEPHALITIS IN ST. LOUIS

Elsewhere in this issue is a special article on the epidemic of encephalitis in St. Louis and St. Louis County, where more than 115 deaths have occurred and the number of cases continues to increase, now totaling approximately 656. Occasional cases of epidemic (lethargic) encephalitis appearing in other parts of the country tend to be confused with the situation that exists in Missouri. The condition that has appeared in epidemic form in St. Louis County is not, apparently, the usual epidemic encephalitis but a new form classified as encephalitis B and identified by health authorities with a similar condition, which has previously occurred in Japan and Australia. The United States Public Health Service, the United States Army Medical Corps and both local and state officials have combined in an intensive study of the condition, without thus far having obtained more than a slight lead toward establishing its nature and with little, if any, knowledge of its means of transmission. Without definite knowledge of the cause of the disease or of its mode of transmission, it is impossible to establish any certain method of prevention or control. Moreover, as far as is known, there is nothing specific in the treatment of this disease. Such treatment as is now being given is supportive, including intravenous injection of dextrose and the usual symptomatic care.

All indications thus far determined as to the cause of the condition point to an unidentified virus capable of passing a Berkefeld filter and therefore susceptible of demonstration only by its ability to produce disease when injected into animals. Available reports indicate that monkeys have been inoculated, with the occurrence thereafter of fever and tremor and the weakness characteristic of human beings in whom this disorder develops. Both horses and mules have been inoculated with material taken from the brains of those who have died of the disease, and it is reported that a similar condition was produced in one of these animals. The scientists who are conducting this collective investigation may be depended on to continue their work with the vast material now available from those ill with the disease and from those who have died of it.

There has been some attempt to determine whether or not mosquitoes, which are present in St. Louis in unusual numbers, may not be associated with the transmission of the disorder, but thus far such experiments have not been at all conclusive.

In the meantime, physicians throughout the country should report at once to health officers in their localities the occurrence of any well established case of a similar disorder, or even any case that seems to be slightly suggestive of this disorder. Although the condition seems for the present to be rather well localized in St. Louis County, it is impossible to predict when cases may appear in some other community. If they do, the mere fact of that appearance may afford an invaluable clue to the mode of transmission. Physicians everywhere must be alert for the occurrence of this disorder. Certain symptoms should lead to suspicion of the diagnosis of encephalitis B: sudden onset, high temperature which lasts about a week and then declines, headache, occasionally diplopia, occasionally lethargy, but also tremors and convulsions. Lumbar puncture reveals clear spinal fluid usually under pressure, with a high cell count and with globulin and sugar, and the blood count shows a leukocytosis of from 15,000 to 20,000. It is conceivable, as with poliomyelitis and other conditions involving the nervous system, that there may be occasional cases so mild as to be overlooked. Patients thus affected, however, on becoming well, act as carriers of the disorder to other people. Epidemiologists are inclined to postulate special sensitivity or a natural immunity in some instances, which may be the reason for a single case occurring in many families. It is the history of similar disorders that the coming of cold weather is associated with their gradual disappearance.

PHYSICIANS AND THE NRA

A letter from Gen. T. S. Hammond, Executive Director, Blue Eagle Division of the National Recovery Administration, published elsewhere in this issue,[1] expresses his regret that recent editorials in THE JOURNAL have indicated "a misunderstanding of the National Recovery Administration's policy toward doctors and dentists." The headquarters personnel of the American Medical Association has studied the National Industrial Recovery Act ever since it was introduced in Congress. It has also studied the President's Reemployment Agreement. The act is, by its terms, clearly limited to trades and industries. It is not applicable to the professions, except as they are integral parts of trades and industries, and the private practice of medicine does not come within that category. If Congress had intended the act to cover the professions, it easily could and presumably would have said so.

1. Association News, this issue, p. 935.

The phraseology of the President's Reemployment Agreement with respect to the professions is ambiguous. When the agreement provides for the exemption of professional persons who are employees, in certain favored communities, from restrictions as to hours of labor, it clearly implies that in all other respects and in all places professional persons as employees are subject to the terms of the agreement. However, the agreement purports on its face to have been promulgated by authority of section 4, subsection (a), of the National Industrial Recovery Act, and the authority there granted covers only trades and industries.[2] The National Recovery Administration, moreover, has officially interpreted the President's Reemployment Agreement as not covering professional occupations.[3]

Disregarding the strict letter of the law, however, and seeking to find ways in which it could best cooperate with the President in his effort to bring the Blue Eagle campaign to a successful issue, the American Medical Association has made personal contacts with representatives of the National Recovery Administration in Washington and has corresponded with the administration. It has studied all available interpretations of the National Industrial Recovery Act and of the President's Reemployment Agreement as they have been made public. It has sought information from other sources whenever and wherever practicable. The information thus obtained, including interpretations and instructions from official sources, the Association still finds difficult to weave into a consistent whole. On the basis of all information thus far acquired, however, including the information embodied in General Hammond's letter, THE JOURNAL now submits an outline of advice for the information and guidance of its readers.

As was said in a previous editorial, it is hoped that every physician and medical institution will enter into the spirit of this movement so as to assure its success.

PRESCHOOL EXAMINATIONS BY THE FAMILY DOCTOR

The opening of the schools this month means the return of millions of children to their studies and the entry of other millions for the first time on a life that is totally new to them. The entry into school represents one of the most radical transitions in the life of a child. It takes place at the end of a period in the child's life which is often neglected from the standpoint of health. Thus, children entering school are customarily found suffering with large numbers of correctable defects.

Until about 1924, not much stress was laid on health problems affecting children of the ages between infancy and school. Infant health had its place in the limelight during and just after the war, while school health had been the subject of attention since the last decade of the nineteenth century. In between lay the preschool years, the runabout period, during which tonsils and adenoids became infected, teeth decayed, eyes failed, speech defects and behavior problems grew and developed, and even the more serious diseases such as cardiac lesions and childhood tuberculosis took their toll, fewer as to number but more important as to significance in the life of the child. The contagious diseases and their complications also impaired the health of preschool children. As a result of all these factors, children have been delivered to the educational system in more or less impaired health and consequently unfit for the radical transition from a life of play to one of responsibility, from home dependence to comparative self reliance, from a protected situation in the home to competition and cooperation with others.

Realization of the need for health supervision of the preschool child has grown since 1924. The largest single project in this field is that of the National Congress of Parents and Teachers, which in 1925 caught the popular imagination with its slogan "The Summer Round-Up of the Children" and since then has been carrying on this activity. The report [1] for 1932 shows that some 85,000 children were examined and the results reported to the national congress. Other examinations not reported increased this total, and still other thousands have been examined by health departments and child welfare agencies not affiliated with the national congress. The program of the national congress has had the cooperation of the American Medical Association, which through *Hygeia* has furnished half the blanks used each year. Moreover, doctors singly and as society groups have cooperated liberally in many preschool health projects.

Thus far, most of the examinations have been conducted on the so-called clinic plan. Groups of children have been assembled and given an examination by a group of doctors, usually volunteer, assisted by nurses of the health department or voluntary agency and by lay helpers from the sponsoring organization. Dentists sometimes assist in their special field. No doubt, good has come out of these examinations, superficial as they are for the most part. However, they have not done as much good as a more thorough examination would have done. The group method has inherent defects which preclude the greatest benefits. There is lack of privacy, quiet and leisure, all of which

2. "The President is authorized to enter into agreements with, and to approve voluntary agreements between and among, persons engaged in a trade or industry, labor organizations, and trade or industrial organizations, associations, or groups, relating to any trade or industry, if in his judgment such agreements will aid in effectuating the policy of this title with respect to transactions in or affecting interstate or foreign commerce, and will be consistent with the requirements of clause (2) of subsection (a) of section 3 for a code of fair competition." —National Industrial Recovery Act, section 4, subsection (a).

3. "The following groups of employment are not intended to be covered by the President's Reemployment Agreement: 1. Professional occupations. . . ." — National Recovery Administration, Interpretations of President's Reemployment Agreement. Interpretation No. 6 (Concerning employments covered by the agreement).

1. The Summer Round-Up of the Children, A Health Activity of the National Congress of Parents and Teachers, 1201 Sixteenth Street, N.W., Washington, D. C.: General Summary of Results of 1932 Campaign and Summary of Results by State Totals.

are essential to a good examination. Moreover, a single examination, hurriedly made, gives no true picture of a child's actual condition. The gross and obvious defects can be and are discovered, and that is a gain, but the less obvious deviations from normal, to say nothing of environmental hygienic errors, can be discovered only by a more exhaustive examination. Such an examination can be done only in the private office of the family physician. In New York City it has been demonstrated that examinations, which are school entrance requirements, need not be made by school staff physicians but can better be made by the family physician.[2]

The National Congress of Parents and Teachers, as well as other public health workers, recognizes that the best results will be obtained from preschool examinations, as well as other phases of periodic health examinations, when they are taken over by the general practitioner. Meager statistics indicate that this is virtually an untilled field, from which great harvests of health improvement remain to be gathered. Individual health improvement is the next great step in the progress of public health. It does not lend itself to mass movements. It is preeminently the field of the general practitioner.

2. Examination of School Children, editorial, Bull. M. Soc. County of Kings and Academy of Medicine of Brooklyn **12**: 99 (Aug.) 1933.

Current Comment

YOUR CARD FOR THE DIRECTORY

This month an information card is being sent from the headquarters office of the American Medical Association to every physician in the United States and Canada. The information thus secured is to be used in the compiling of the thirteenth edition of the American Medical Directory. The directory is prepared at regular intervals in the Biographic Department of the American Medical Association. The last previous directory appeared in 1931. This volume is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States. In it, as in no other published directory, may one find dependable data concerning physicians, hospitals, medical organizations and activities. It provides full information concerning medical colleges, specialization in the field of medical practice, memberships in special medical societies, tabulations of medical journals and medical libraries and, indeed, practically every important fact concerning the medical profession in which any one might possibly be interested. Therefore, those who receive this card should fill it out and return it promptly whether or not any change has occurred in any of the points on which information is requested. Should any reader fail to receive a card before the first of October, he may aid by writing at once to the headquarters office, stating that fact and indicating such changes as he may desire in the information published in the 1931 issue of the directory.

SAFETY ON THE GRIDIRON

In its criticisms of the health hazards of football, THE JOURNAL has frequently protested against the seeming indifference shown by many promoters of this sport. During the football season of 1932, changes in the rules, somewhat reluctantly adopted in the face of a few tragic fatalities that received nationwide notice, were put into operation. They did not solve the problem of eliminating the hazards of the game in the degree hoped for. The secretary of the football rules committee reported during the midwinter convention of the National Collegiate Athletic Association that the number of serious and fatal injuries reported by the press during 1932 was disconcerting, as it was confidently expected that the changes in the rules effected in February, 1932, would bring about a much lower average. Although there was a material decrease from 1931, the casualty list reported constituted a problem of serious import.[1] In a game involving so much physical contact as the present rules permit, even an unprejudiced observer is forced to admit that injuries to the players are to be expected. It is perhaps unfortunate that the real leadership in the sport rests in the hands of persons who seem to be far more concerned with problems of "strategy" and the urge to win than with the opportunities for eliminating the rigors of the game. Is it going to require a few more spectacular deaths of "fighting youth" to raise a national protest against the apparent laxity or indifference of those in command? It has been estimated that about three quarters of a million young Americans play football each year, with a mortality rate of less than 0.03 per cent. What the morbidity among the players is cannot readily be conjectured. To some devotees of the game the arraignment of football on the basis of such figures seems to be unwarranted, but at least one member of the collegiate administrative group has sensed the situation. In an appeal for advanced leadership on the part of the national association, he referred to the football injuries, stating that every effort should be made by officials to avoid the appearance of being forced by public opinion to make changes in the rules.

1. The situation was reviewed by R. F. Kelley in the New York Times, Dec. 31, 1932.

ACTIVE IMMUNIZATION WITH TETANUS TOXOID

Successful immunization of man with tetanus toxoid was reported several years ago by French investigators and has recently been confirmed by Lincoln and Greenwald,[1] of the New York department of health. The antigen used by the New York clinicians was a formaldehyde-treated tetanus toxin incubated for ten days. Intramuscular injections of the resulting toxoid were painful, but general reactions did not occur and local reactions were slight. Before the first injection no trace of tetanus antitoxin was demonstrable in the serum of any one of the eighteen human volunteers. From four to eight months later, traces were demonstrable in all, the amounts in four of them being suffi-

1. Lincoln, E. M., and Greenwald, C. K.: Proc. Soc. Exper. Biol. & Med. **30**: 1241 (June) 1933.

cient for definite titration; one cubic centimeter of the serum of certain individuals, for example, neutralized from one to two guinea-pig minimum lethal doses of tetanus toxin. Six months later, five of the original volunteers were reinjected. From six to eight months later these revaccinated individuals yielded serums which contained from 25 to 75 neutralizing units per cubic centimeter. At the same time, six of the original volunteers who had not been reinjected still showed traces of antitoxin, in several of them in definitely increased amounts (e. g., 5 neutralizing units per cubic centimeter). Today, three years after the initial injection, thirteen of the volunteers have been retested. In all but one of them, antitoxin is still demonstrable. One interesting exception to the suggested general rule is reported, a child of five years who developed no demonstrable immunity after two series of tetanus toxoid injections but who did develop a demonstrable immunity to diphtheria (Schick test) after three routine injections of diphtheria toxin-antitoxin mixture.

Association News

PHYSICIANS AND THE NRA

To the Editor:—My attention has been called to editorials which have appeared in the issues of August 12, 19 and 26, of THE JOURNAL of the American Medical Society, and I regret that there has been a misunderstanding of the National Recovery Administration's policy toward doctors and dentists.

While it is not the intention of the Administration to make it a matter of compulsion to have professional persons place their employees under the provisions of the President's Reemployment Agreement, it is the earnest desire of the Administration that they do so, thus showing their willingness to cooperate with the President's Reemployment Program.

Under the provisions of the Agreement, professional employees of doctors and dentists are excepted from the maximum hour provision of the Agreement while employed in their professional capacity. The term "professional employee" includes interns, technicians and nurses. All non-professional employees are intended to be covered by both the wage and hour provisions of the Agreement.

The general rule that the maximum hour limitation shall not apply to employees in establishments employing not more than two persons in towns of less than 2,500 population, which towns are not part of a larger trade area, would, of course, apply to doctors and dentists.

I regret the misunderstanding which has existed to date, and shall greatly appreciate your good offices in placing this correction before your readers.

T. S. HAMMOND, Executive Director,
Blue Eagle Division of the N R A.

In an endeavor to comply with General Hammond's request, the following statement is made for the information and guidance of physicians. It is based on the most recent, accurate information that the Association has as yet been able to obtain:

1. The National Industrial Recovery Act and the President's Reemployment Agreement do not cover legally the practice of medicine. A practitioner of medicine is not within the purview of the act or of the agreement unless his practice is an integral part of a trade or industry. He incurs no legal liability if he refrains from signing the agreement. All this, however, should not prevent any physician from signing the agreement if he desires and if he can do so consistently with the purpose and spirit of the National Industrial Recovery Act.

2. Before signing the President's Reemployment Agreement, a physician should determine whether his doing so and displaying the Blue Eagle may not tend to discriminate against his less prosperous professional associates. The elimination of unfair competition is one of the basic purposes of the National Industrial Recovery Act. The President himself[1] has no authority to approve a code or to enter into an agreement that will eliminate, oppress or discriminate against small enterprises. Certainly, then, no one has the right to utilize the President's Reemployment Agreement as the means for unfairly getting the better of a competitor. The financially successful physician who thinks of signing the agreement should therefore bear in mind that if he displays the Blue Eagle he may seem to be bidding for the patronage of every person who has signed the President's Reemployment Agreement or the Consumer's Agreement, and that this will include a bid for the patronage of the patients of the less prosperous physicians in the community, who because of financial considerations cannot practice under the terms of the Reemployment Agreement. Every patient who has subscribed to either of the agreements named, it should be borne in mind, is bound by a solemn obligation to patronize physicians who have signed it. A physician who desires to subject himself to the President's Reemployment Agreement may seek the advice of his county medical society before he commits himself. The society can advise him whether the signing of the agreement and the display of the Blue Eagle by one or more physicians in the community will tend to eliminate, oppress and discriminate against others, contrary to the principles of the National Industrial Recovery Act.

3. Every county medical society may well, either with or without a request for advice from some individual physician, determine whether the requirements of the President's Reemployment Agreement are such that every physician in the community can practice under it without undue hardship. If the society finds that that is the case, the forbidden element of unfair competition and the oppression of weak competitors can hardly be said to enter into the situation, and every physician may be left to decide for himself whether he will or will not practice under the agreement. If, on the other hand, the society finds that some physicians, because of conditions beyond their control, cannot without undue hardship subject themselves to the requirements of the agreement, the society can then determine whether the agreement is susceptible of modifications that will make it possible for every physician in the community to submit to its terms. If the agreement is susceptible of being so modified, the society can submit to the National Recovery Administration a petition for such modification. The agreement itself[2] recognizes that modifications may be necessary and provides a rather one-sided way for bringing them about in order to avoid hardship in individual cases. There is no reason, however, why by a somewhat similar procedure the agreement should not be modified to meet the needs of the medical profession of a county. If the agreement is so modified, the element of the elimination, oppression, discrimination and unfairness against weaker competitors will have been removed and it may be left for each physician to choose his own course.

4. To avoid future disappointment, it must be recognized that the law does not provide for the punishment of a physician who signs the President's Reemployment Agreement and then cheats. It is understood, however, that the National Recovery Administration has in mind the setting up of machinery whereby persons who have obtained the Blue Eagle and who cheat under it will be held up to public odium through action compelling the surrender of the official insignia. County medical societies that approve the President's Reemployment Agreement in its original or in any modified form may well consider how they can best cooperate with the National Recovery Administration in any efforts that may be made to enforce honest compliance with its terms by all practitioners who sign it, whether members of the society or not.

5. A physician who employs no one can subject himself to the requirements of the President's Reemployment Agreement if he so desires and thus obtain the right to display the Blue Eagle.[3] A physician without employees obligates himself by signing the agreement to hire in accordance with the terms of the agreement such employees, if any, as he may engage during the life of the agreement; that is, until Dec. 31, 1933. Whether a physician has more than two employees in his service, or has none at all, is immaterial as far as the privilege of signing the agreement and obtaining the Blue Eagle are concerned.

6. Hospitals are not within the purview of the National Industrial Recovery Act or of the President's Reemployment Agreement unless they are integral parts of a trade or industry.

1. National Industrial Recovery Act, section 3, subsection (a), clause 2; section 4, subsection (a).
2. President's Reemployment Agreement, paragraph 14.
3. National Recovery Administration, Interpretations of President's Reemployment Agreement, Interpretation 14 (concerning owners of stores without employees).

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

September 19. Gallbladder Disease.
September 21. Unusual Health Hazards.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

September 23. Well Known Sayings That Aren't So.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

COLORADO

Medical Meeting.—Officers elected at the midsummer meeting of the Arkansas Valley Medical Association in Salida, August 12, are Drs. Raynor E. Holmes, Canon City, president; C. Rex Fuller, Salida, vice president, and Kon Wyatt, Canon City, secretary. Guest speakers included Drs. Charles E. Eimer, St. Louis, and George W. Hawley, Bridgeport, Conn.; their subjects were acute otitis media and common signs of common injuries, respectively. Papers were presented by Drs. John D. Geissinger, Pueblo, asphyxia neonatorum, and J. Sims Norman, Pueblo, compression fractures of the spine. A paper on paroxysmal tachycardia by Dr. Leo W. Bortree, Colorado Springs, who was unable to attend, was read by Dr. Tom R. Knowles. Drs. Harold T. Low and Lester L. Ward, Pueblo, showed a motion picture on "Transurethral Resection of the Prostate Under Spinal Anesthesia." The session concluded with a barbecue supper and dancing.

DELAWARE

State Medical Meeting at Wilmington, September 26-27.—The one hundred and forty-fourth annual meeting of the Medical Society of Delaware will be held at Wilmington, September 26-27, under the presidency of Dr. William H. Speer, who will speak on "The Future of the Medical Profession in the Next Twenty-Five Years." The following physicians are on the scientific program:

Allen D. King, Wilmington, Etiology and Treatment of Acne Vulgaris.
Temple S. Fay, Philadelphia, Treatment of Acute and Chronic Injuries to the Brain.
Newell R. Washburn, Milford, Cystitis: Its Cause and Treatment.
Walter E. Dandy, Baltimore, Diagnosis and Treatment of Lesions of the Cranial Nerves.
Loyal A. Shoudy, Bethlehem, Choice of Physician Under Workmen's Compensation Laws.
Rolla E. Dyer, Washington, D. C., Rocky Mountain Spotted Fever.
Joseph P. Wales, Wilmington, The Family Doctor and His Responsibility to the Pretuberculosis Child.
Thomas S. Cullen, Baltimore, The Early Recognition of Cancer.
Alfred Stengel, Philadelphia, Medicine, Past and Present.
Arthur J. Cramp, director, Bureau of Investigation, American Medical Association, Chicago, Pink Pills and Panaceas.
Dean Lewis, Baltimore, The Solutions of Problems in Medicine.
Ira Burns, Wilmington, Radium as a Therapeutic Agent.
Floyd E. Keene, Philadelphia, Treatment of Myoma Uteri.
Claude Uhler, Farnhurst, Psychopathic Personality Among Children.
Charles P. Noble, Radnor, Prevention and Care of What Is Called Old Age.

DISTRICT OF COLUMBIA

Health at Washington.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended September 2, indicate that the highest mortality rate (17.9) appears for Washington, and for the group of cities as a whole, 9.6. The mortality rate for Washington for the corresponding week last year was 19.3, and for the group of cities, 9.9. The annual rate for eighty-five cities for the thirty-five weeks of 1933 was 11, as against a rate of 11.4 for the corresponding period of the previous year. Caution should be used in the interpretation of these figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

ILLINOIS

Society News.—Dr. August A. Werner, St. Louis, addressed the Madison County Medical Society at Highland, September 1, on "Symptoms Which Accompany Castration, Ovarian Hypofunction and Menopause."——A recent meeting of the Macoupin County Medical Society at Carlinville was addressed by Dr. Neil S. Moore, St. Louis, on "Transurethral Correction of Bladder Neck Obstructions."

Chicago

Dr. Adson to Give Mayo Lecture.—Dr. Alfred W. Adson, associate professor of surgery, University of Minnesota Graduate School of Medicine, Rochester, will deliver the third annual Mayo Lecture on Surgery at Northwestern University Medical School, October 6, in Thorne Memorial Hall on McKinlock Campus. Dr. Adson's subject will be "Surgical Consideration of Brain Tumors."

Cost of Health Service.—During 1932-1933 the health service for the staff at the University of Chicago Clinics cost $1.78 per person each month, or $21.46 a year. About 12 per cent of this cost, or $2.56 per member for the year, was for public health features. Approximately $10,000 was expended for public health and hospitalization. There was an average of 995 members in the plan last year.

The Dinner at the Century of Progress.—The Chicago Medical Society will give a reception and dinner to officers of the American Medical Association and its constituent medical societies in the Trustees' Lounge, Hall of Science, Century of Progress, September 22. Dr. Dean Lewis, Baltimore, President of the Association, will speak on "Medical Organization," and Dr. Eben J. Carey, director of the medical section, Century of Progress, will give an illustrated address on "A Century of Progress."

INDIANA

State Medical Meeting at French Lick.—The eighty-sixth annual session of the Indiana State Medical Association will be held at the French Lick Springs Hotel, French Lick, September 25-27, under the presidency of Dr. Joseph H. Weinstein, and with the Orange County and the Third District medical societies acting as hosts. Guest speakers will include the following physicians:

Howard C. Ballenger, Chicago, Otolaryngology in General Practice.
Arthur Hale Curtis, Chicago, Special Features in the Etiology and Diagnosis of Cancer of the Uterus: Treatment.
Ernest Sachs, St. Louis, Brain Tumors: Why the Diagnosis Is Better and the Operative Results More Satisfactory.

Indiana physicians on the program include the following:

John H. Warvel, Indianapolis, Management of Diabetes.
Alois L. Ziliak, Princeton, Cancer: Etiologic Conditions.
Carl P. Schoen, New Albany, Postoperative Atelectasis.
Verne K. Harvey, Indianapolis, Medical Profession and the Reorganization of the State Board of Health.
Bayard G. Keeney, Shelbyville, The Determinants of Kidney Function.
Cecil L. Rudesill, Indianapolis, Differential Diagnosis of Biliary Diseases.
John E. Dalton, Indianapolis, Lymphogranulomatosis Inguinalis.
Russell A. Flack, Lafayette, Coronary Occlusion.
Pierce MacKenzie, Evansville, Diet and Fluids in Pregnancy.
James Y. Welborn, Evansville, Treatment of Fractures.
Frank H. Jett, Terre Haute, Aseptic Treatment of Primary Wounds.
M. C. Sexton, Rushville, Experience with Spinal Anesthesia.
Neslen K. Forster, Hammond, Consideration in the Management of Functional Disturbances of Menstruation.
Raymond C. Beeler and James N. Collins, Indianapolis, Diagnosis of Maxillary Sinusitis by the Use of Opaque Oils.
Eugene L. Bulson, Fort Wayne, Malignant Disease of the Larynx; Peroral Endoscopy as an Indispensable Aid in Its Early Diagnosis.
James C. Carter, Indianapolis, The Pediatrician and the Otolaryngologist.
Edwin W. Dyar, Jr., Indianapolis, Value of Perimetry in Ocular Diagnosis and Prognosis.

Tuesday afternoon will be devoted to a round table discussion of economics with Gov. Paul V. McNutt as guest of honor. Speakers at this session will include Drs. Walter F. Kelly and Willis D. Gatch, Indianapolis; Paul S. Johnson, Richmond; Alexander W. Cavins and Albert M. Mitchell, Terre Haute, and Paul A. Garber, Whiting. The annual banquet, Wednesday evening, will be addressed by Drs. Walter L. Bierring, Des Moines, President-Elect, American Medical Association, and Morris Fishbein, Chicago, editor of THE JOURNAL; their respective subjects will be "Function of the American Medical Association in Medical Education" and "Present Trends in Medical Practice." On this occasion a certificate of merit will be presented to Dr. Franklin S. Crockett, president of the state medical association in 1932. An elaborate program of entertainment has been arranged, and at a dinner meeting of women physicians, Tuesday evening, Dr. Alice N. Pickett, Louisville, Ky., will speak.

IOWA

Diphtheria Immunization Campaign.—Plans have been announced for a campaign to immunize children of preschool and early school age in Davenport. Members of the Scott County Medical Society will cooperate, and children of parents unable to pay will be treated at the Scott County Clinic.

Personal.—Dr. William Stevenson, life member of the Iowa State Medical Society, has been made an emeritus member of the Des Moines Academy of Medicine.——Dr. Frederick J. Swift, Maquoketa, has assumed his duties as deputy health commissioner of Iowa, succeeding Dr. William W. Johnston. ——Dr. Glen W. Doolen, Davenport, has been appointed a member of the executive board of the Iowa Tuberculosis Association.

KANSAS

Society News.—Dr. Maurice A. Walker, Kansas City, directed a pathologic conference before the Wyandotte County Medical Society, July 25, and Drs. Charles O. West and Lewis G. Allen, Kansas City, discussed "Acute Summer Rashes" and "The Bronchograph," respectively. At a meeting of the society, September 5, the speakers were Drs. Eldon S. Miller and Fred E. Angle, Kansas City, on "Nondiabetic Glycosuria and its Significance" and "The Electrocardiogram in Coronary Disease," respectively.

Annual Registration Due Not Later Than October 1.—All practitioners of medicine and surgery holding certificates to practice in Kansas are required by law to renew their certificates annually, after July 1 and not later than October 1, by registering with the secretary of the board of medical registration and examination and paying a fee of $1. If a licentiate has not effected his annual registration by October 1, his name will be stricken from the register of physicians kept by the board and will be restored only on the payment of $5 and the submission of satisfactory proof as to his moral fitness.

LOUISIANA

Grants for Medical Research.—Donations and appropriations to Tulane University of Louisiana School of Medicine, announced in a recent Tulane *News Bulletin*, include the following:

The Commonwealth Fund, $25,000 for the operation of teaching clinics.
The Commonwealth Fund, $25,000 for teaching of preventive medicine in the schools of medicine and graduate medicine.
The General Education Board, $45,000 for the departments of medicine and surgery.
An anonymous donor, $5,250 for the department of medicine.

University News.—Tulane University of Louisiana School of Medicine, New Orleans, has received as a gift the medical library of the late Dr. William H. Oliver, Bryan, Texas, a graduate of the class of 1890.——Felix Brümmer, Ph.D., has been appointed assistant professor of sociology at the School of Social Work, Tulane University of Louisiana; he will conduct courses in child welfare. Dr. Brümmer came from South Africa to the United States and spent the past two years at the University of Chicago.

MINNESOTA

Report on Cancer Survey.—Although the general death rate of Minnesota is declining, the death rate from cancer has shown a steady increase in the last twenty years, according to a cancer survey recently completed by the American Society for the Control of Cancer at the invitation of the Minnesota State Medical Association. Since 1912 there have been but three years in which the cancer death rate was lower than in the preceding year and such slight decreases have been followed by a rise to a higher point than the one preceding the decrease. During the five years ended with 1931 there was an increase of more than twelve per hundred thousand in the death rate, while during the twenty years, 1912-1931, the rate increased from 70.1 to 124.2 per hundred thousand. The latter rate was estimated on the 1930 population of 2,563,953, in which a total of 3,199 cancer deaths occurred. The number of living cases in 1931 was estimated to be 9,597, or three cases for each physician in the state. Sixty-one hospitals, with a bed capacity of 8,102, cared for 170,065 adult patients in 1931, of whom 6,460, or 3.7 per cent, had cancer. These figures, however, include the Mayo Clinic. When nonresidents were subtracted, the total remained 132,243, with 3,429 cancer patients. The latter figures give a cancer admission rate of 2.6, which is more nearly a true picture of the cancer situation in Minnesota. The largest percentage of cancer patients in any hospital was 9.8 and the lowest was 0.3. In this group of sixty-one hospitals, 15 per cent of the cancer patients died in the hospitals, while the deaths from all admissions were 4 per cent. But 30 per cent of the cancer deaths in Minnesota in 1931 took place in the hospitals of that state. It was estimated that 6,460 cancer patients were treated in 1931 in the general hospitals of the state having a listed capacity of thirty beds or more each; of this number 975 died. Minnesota has only one hospital devoted exclusively to the treatment of cancer and allied diseases, the Cancer Institute of the Minnesota General Hospital. Twenty-two hospitals in Minnesota are without laboratories for the diagnosis of tumor tissue. Nine hospitals were found to have x-ray apparatus of 200,000 volts or more and eight had apparatus with a capacity between 150,000 and 200,000 volts. A total of 4,512.3 mg. of medical radium was reported. The report recommended education of physicians throughout the state in the recognition and treatment of malignancy, with the further suggestion that the state department of health actively engage in a cancer education program among the public by the distribution of literature. The organization of local committees to cooperate with a permanent state cancer committee was recommended, as well as the establishment of special cancer services at the various medical institutions of the state. It was also suggested that a division of cancer control should be developed in the state department of health. Cooperating agencies in this survey were the state medical association, the Minnesota Hospital Association, the state department of health and the University of Minnesota.

MISSOURI

Hospital News.—With the transfer of patients to the new Firmin Desloge Hospital, St. Mary's Infirmary, St. Louis, became a hospital for Negroes. It was recently reopened with a staff of forty-seven Negro physicians.

Physician Honored.—Dr. William Ellery, La Grange, was honored, July 31, when several hundred people gathered in a public park to observe his seventy-ninth birthday. Following the dinner, a program of entertainment was offered, and a purse of $79 presented to Dr. Ellery.

Communicable Disease Regulations.—An advisory committee to the St. Louis Health Department has been appointed to assist in the revision of rules for the control of communicable diseases. Members of the committee are Dr. Paul J. Zentay, assistant health commissioner, chairman; Jacques Bronfenbrenner, Dr.P.H., Drs. Jean V. Cooke, Moyer S. Fleisher, Theodore C. Hempelmann, Ralph S. Muckenfuss and John Zahorsky.

NEBRASKA

Annual Registration Due October 1.—All practitioners of medicine and surgery holding licenses to practice in Nebraska are required by law to register annually, on or before October 1, with the department of public welfare and to pay a fee of $1. A license expires if the licentiate fails to register. The department, however, suspends action for thirty days. At the expiration of that period, if the registration fee and a penalty of $1 have not been paid, the license is revoked.

Society News.—Dr. Eldridge L. Eliason, Philadelphia, addressed the first fall meeting of the Omaha-Douglas County Medical Society, September 6, on "Individuality in Treatment of Fractures."——At a meeting of the Cedar-Dakota-Dixon-Thurston-Wayne Counties Medical Society in Winnebago, August 4, the speakers, all from Omaha, were Drs. Francis J. Bean, on "Our University Hospital"; Alfred J. Brown, "The Thyroid Gland," and John J. Keegan, "Diagnosis of Brain Tumor."——Speakers before the Custer County Medical Society at Callaway, August 8, were Drs. Floyd S. Clarke, Omaha, on "Pneumonia in Children"; Karl S. J. Hohlen, Lincoln, "End-Results of Brain Injuries," and Claude A. Selby, North Platte, "Medical Economics."

NEW JERSEY

Medical Relief Policy Adopted.—In accordance with a resolution adopted at the annual session of the Medical Society of New Jersey, a medical advisory committee to cooperate with the State of New Jersey Emergency Relief Administration has been appointed by the state director of relief and has drawn up a plan for medical relief. The committee will consider jointly with the relief administration questions involving the interests of the medical profession, will aid in the interpretation of these policies to physicians and the public, and in organization of county advisory committees. Members are Drs. Charles H. Schlicter, Elizabeth; Christopher C. Beling, Newark, and Spencer T. Snedecor, Hackensack. In the plan for handling relief, preservation of personal relationship between physician and patient was held paramount. Free choice of physician and hospital is permitted to all applicants, and according to the agreement the Emergency Relief Administration may

submit rosters of physicians but not the name of any one physician. Authorization for medical care is to be issued on special forms, except that in emergencies authorization may be given by telephone to be followed immediately by the written order. The order provides for two weeks' care not involving more than ten visits or an expenditure of more than $20. Further care must be authorized by renewal of the order only after investigation of the case in the home. Medical care for chronic or prolonged illness is to be handled on an individual basis but in general is to be limited to one visit per week for three months. In obstetric cases the Emergency Relief Administration agrees to pay for authorized services in the home not more than $25, which shall include at least three prenatal office visits, delivery and the necessary postnatal care. All prescriptions for necessary drugs and medicines must be filled from the National Formulary or the U. S. Pharmacopeia or from a hospital formulary; no proprietary remedies will be paid for. Procedures to be followed in special cases of emergency, unusual extra services, operations, submitting of bills and relations with medical societies and health agencies were also outlined in the committee's plan.

NEW YORK

Society News.—The annual meeting of the Seventh District Branch of the Medical Society of the State of New York will be held in Rochester, September 21, with the following speakers:

Dr. Royd R. Sayers, U. S. Public Health Service, Washington, D. C., Effects of Breathing Dust, with Especial Reference to Silicosis.
Dr. Charles Gordon Heyd, New York, Mechanism and Clinical Interpretation of Jaundice.
Dr. Byrl R. Kirklin, Rochester, Minn., Diagnosis of Pulmonary Tuberculosis.
Dr. Arthur J. Bedell, Albany, Medical Ophthalmoscopy, the Connecting Link Between the Physician and the Specialist.
Dr. Fred H. Albee, New York, Bacteriophage in Wound Treatment.

New York City

Outbreak of Food Poisoning.—According to the New York *Times*, about 150 employees of Dun and Bradstreet, Inc., became ill of food poisoning after luncheon in the company cafeteria, August 23. Twenty-two were taken to hospitals. Eight ambulances from Beekman Street, Gouverneur, Bellevue, St. Vincent's and Broad Street hospitals were sent to the building, where twenty interns, a group of nurses and several squads of police worked five hours helping the sick to hospitals or to their homes. The city health department began an investigation of egg salad sandwiches, which were suspected of being the cause. The salad was made at home by an employee of the cafeteria and brought to the building in wooden tubs.

The Sixth Graduate Fortnight.—The sixth annual Graduate Fortnight of the New York Academy of Medicine will be held, October 23 to November 3, on the general subject "Disorders of Metabolism." Clinics will be held each afternoon at two of the following hospitals: Bellevue, Beth Israel, Mount Sinai, Fifth Avenue, Lenox Hill, Post-Graduate, Presbyterian, Montefiore, St. Luke's, New York, Polyclinic, Rockefeller Institute, Hospital for Joint Diseases and the Neurological Institute. The following program of addresses has been arranged for the evening sessions at the academy building:

Dr. Eugene F. Du Bois, Total Energy Exchange in Relation to Clinical Medicine.
Dr. Harold E. Himwich, New Haven, Conn., The Metabolism of Fever.
Dr. Walter W. Palmer, Metabolism in Hyperthyroidism and Hypothyroidism.
Dr. Frank H. Lahey, Boston, Surgical Treatment of Hyperthyroidism.
Donald D. Van Slyke, Ph.D., Acidosis and Alkalosis.
Dr. Joseph C. Aub, Boston, Mineral Metabolism.
Dr. Alexander Ashley Weech, Fluid Distribution and Edema.
Dr. Dana W. Atchley, Dehydration and Medical Shock.
Erwin Brand, Ph.D., Congenital Anomalies of Metabolism with Special Reference to Cystinuria and Myopathies.
Dr. Leopold Lichtwitz, formerly of Berlin, Gout and Its Therapy.
Dr. Albert A. Epstein, Clinical and Biologic Considerations of Obesity and Certain Allied Conditions.
Dr. John P. Peters, New Haven, Conn., A Critical Estimate of the Value of Laboratory Procedures in Disorders of Metabolism.
Henry C. Sherman, Ph.D., General Review of Our Knowledge of Vitamins.
Dr. Samuel W. Clausen, Rochester, N. Y., Disorders Due to Moderate Deficiency of Vitamins.
Dr. Oscar M. Schloss, Nondiabetic Ketosis in Children; Dehydration in Infants.
Dr. Henry L. Jaffe, Hyperparathyroidism and Its Relationship to Diseases of Bone.
Charles F. Bodecker, D.D.S., Metabolic Disturbances in Relation to the Teeth.

Dr. Rollin T. Woodyatt, Chicago, will direct a round table conference on diabetes, Monday evening, October 30, in which Drs. Priscilla White, Boston, Herman O. Mosenthal and Henry Rawle Geyelin will take part. Dr. Wilder Penfield, professor of neurology and neurosurgery, McGill University Faculty of Medicine, Montreal, will deliver the Wesley M. Carpenter Lecture, Thursday evening, November 2, on "The Influence of the Diencephalon and Hypophysis upon the General Autonomic Functions." Concurrent with the Graduate Fortnight and for a week thereafter an extensive exhibit showing the various aspects of metabolic disorders will be on view. Some sections will be demonstrated by lectures. Among subjects to be covered are dietary constituents and their derivatives, actions of drugs and therapeutic measures, general and special pathologic metabolism and laboratory methods.

NORTH DAKOTA

Illegal Practitioner Fined.—F. J. Gath, who is said to have treated the sick in the district about his home for several years in violation of the medical practice act, was finally convicted in March, sentenced to serve thirty days in the county jail at Cando and fined $100 and in addition to pay $100 costs. He was released from the jail, May 5, on his agreement to pay the fine at the rate of $10 a month, beginning August 1.

OHIO

Society News.—Dr. Dewey H. Reps, Cincinnati, among others, addressed the Adams County Medical Society at Blue Creek, August 16, on diagnosis and treatment of thyroid disease.——Dr. Frank E. Stevenson, Cincinnati, addressed the Greene County Medical Society, Xenia, August 3, on spinal meningitis.——Drs. Roy D. Arn, Springfield, and Vernon L. Hart, Dayton, addressed the Miami County Medical Society, Piqua, September 1, on "Relief of Pain by Neurosurgical Measures" and "Fractures of the Elbow," respectively.

Personal.—Dr. James J. Marek, Cleveland, won for the second time the president's cup for low gross score at the annual golf tournament of the Cleveland Academy of Medicine, July 26.——Dr. Frank N. Gordon has been transferred from the Veterans' Administration Hospital at Dwight, Ill., to succeed the late Col. Vernon Roberts at the hospital in Dayton.——Dr. Thomas Field Humphrey, Cincinnati, has been appointed resident physician at the Ohio Soldiers' and Sailors' Orphans' Home at Xenia, to succeed Dr. Asa C. Messenger, who resigned in June.——Dr. Mary E. Tracy, district physician for the health department of Cincinnati since 1906, will retire, October 1.

PENNSYLVANIA

Cancer Meeting.—The Cancer Commission of the Medical Society of the State of Pennsylvania held its annual meeting in Oil City, August 14. At the morning session diagnosis and treatment were discussed by Drs. Chevalier and Chevalier Lawrence Jackson, Philadelphia; William H. Mayer and Albert J. Bruecken, Pittsburgh. In the afternoon Dr. William E. Lower, Cleveland, spoke on "Management of Malignant Tumors of the Kidney," and Dr. Jonathan M. Wainwright, Scranton, chairman of the commission, on "Work of the Cancer Commission," and Dr. Joseph Colt Bloodgood, Baltimore, conducted a clinic on tumors of the breast, bone and oral cavity. There was also a round table conference and a special session for dentists. At an evening banquet Dr. John C. A. Gerster, chairman of the New York cancer commission, spoke on "Cancer Education of the Laity." Dr. Ford M. Summerville, Oil City, was toastmaster.

TENNESSEE

Ninety-Nine Years for Murder of Physician.—Three men charged with killing Dr. J. A. Clark of Morrison, during a bank robbery at Morrison, July 25, were convicted by a circuit court jury at McMinnville, August 24, and sentenced to ninety-nine years each in prison. Dr. Clark was shot down by one of the robbers when he attempted to thwart the robbery. The men also received sentences of twenty years each on the robbery charge.

VIRGINIA

Society News.—Among speakers at a meeting of the Medical Society of Northern Virginia, August 15, were Drs. Charles E. Conrad, Harrisonburg, on "The Physician's Relation to the Health Program for Preschool Children"; Lawrence T. Royster, "Diarrhea" and Robert V. Funsten, University, "Congenital Deformities and the Orthopedic Treatment of Infantile Paralysis."——Dr. James B. McElroy, Memphis, Tenn., was a guest speaker at the semiannual meeting of the Southwestern Virginia Medical Society in Wytheville, September 15. Dr. McElroy discussed Bright's disease, and among Virginia physicians who spoke were Drs. Elbyrne G. Gill, Roanoke, on bronchoscopy; James P. King, Radford, fever therapy in dementia paralytica, and Alexander M. Showalter, Christiansburg, cesarean section.

GENERAL

Meeting of Obstetricians and Gynecologists. — The annual meeting of the Central Association of Obstetricians and Gynecologists will be held in Milwaukee, October 5-7, with headquarters at the Hotel Schroeder. Dr. Frank W. Lynch, San Francisco, will be the guest speaker, reporting "Five to Seventeen Year Follow-Up of Cervical Cancers." An afternoon and evening will be devoted to clinics and demonstrations at the Marquette University Medical School.

Safety Congress.—The twenty-second Annual Safety Congress will be held in Chicago, October 2-6, with headquarters at the Stevens Hotel. Three general sessions will be sponsored by the industrial health section: the first on dermatitis and other skin disorders; the second on a practical medical program for industry, and the third on the eye in relation to industry. Dr. Harold S. Hulbert, Chicago, will conduct early morning classes in practical psychology, on "Mental Training for Safety."

"Man in White"—A Play About Physicians. — The Group Theater in New York, in association with Sidney Harmon and James R. Ullman, announce the forthcoming production of a new play called "Man in White" at the Plymouth Theater, New York, September 25. According to the announcement, the theme of the play is derived from certain precepts of Sir William Osler expressed in "Counsels and Ideals." The first thought is that "in his professional relations, though divided by national lines, there remains the feeling that he belongs to a guild which owes no local allegiance, whose work is in the world." The second is a passage in which Osler adjured young physicians to develop "the faculty of isolating yourself from pursuits and pleasures incident to youth. The majority of us have to wrestle hard with the original Adam and find it no easy matter to scorn delights and live laborious days." The scene of "Man in White" is in a modern hospital. The leading players will be Alexander Kirkland, Margaret Barker and J. Edward Bromberg.

Congress of Radiology.—A joint meeting of the American Roentgen Ray Society, the Radiological Society of North America, the American Radium Society and the American College of Radiology, to be known as the American Congress of Radiology, will be held in Chicago, September 25-30, with headquarters at the Palmer House. At the opening general meeting, Monday morning, September 25, Dr. Austin A. Hayden, president of the Chicago Medical Society, will give an address of welcome and there will be addresses by Rufus C. Dawes, president, A Century of Progress Exposition; Drs. Hugh S. Cumming, surgeon general, U. S. Public Health Service; Morris Fishbein, Chicago, editor of THE JOURNAL; Henry K. Pancoast, Philadelphia, president, American Congress of Radiology, and Franklin H. Martin, Chicago, director general, American College of Surgeons. Among a large number of speakers in the scientific sessions will be the following:

Dr. Pedro L. Farinas, Havana, Cuba, Serial Bronchography in the Early Diagnosis of Bronchial Carcinoma.

Drs. Fred Jenner Hodges and Carleton Barnhart Peirce, Ann Arbor, Mich., Roentgen Examination of the Heart.

Charles C. Lauritsen, Ph.D., Pasadena, Calif., Energy Considerations in Medium and High Voltage Therapy.

Dr. Stafford L. Warren, Rochester, N. Y., Preliminary Study of Artificial Fever upon Hopeless Tumor Cases.

Albert Bouwers, Sc.D., Eindhoven, Holland, New Principles Regarding the Design of X-Ray Apparatus.

Dr. Lewis Gregory Cole, New York, The Small Intestines: Correlation of Anatomic, Pathologic and Roentgenologic Findings.

Drs. Eugene T. Leddy, Earl I. L. Cilley and Byrl R. Kirklin, Rochester, Minn., Dangers of Fluoroscopy and Methods of Protection Against Them.

Dr. Douglas Quick, New York, Management of Cancer of the Mouth and the Cervical Lymphatics.

Dr. J. Ernest Gendreau, Montreal, Quebec, Three Years of 300 Kilovolt Cancer Therapy.

Dr. Gordon E. Richards, Toronto, Ontario, Treatment of Chest-Wall Secondaries in Breast Carcinoma—a Preliminary Report of a New Technic.

Dr. Joseph Colt Bloodgood, Baltimore, Preoperative Irradiation with X-Rays or Radium: Its Diagnostic and Therapeutic Advantages.

Dr. José A. Saralegui, Buenos Aires, Argentina, Cholangiography with New Technic and Results.

Dr. Carlos Heuser, Buenos Aires, Argentina, Metrorrhagia from the Radiologic Point of View.

Dr. Jose Baca Gutierrez, Mexico City, Radiotherapy in Mexico.

Drs. Alexander H. Pirie, Montreal, and Arne Torkildsen, Oslo, Norway, Normal Appearance of the Ventricles of the Brain and the Displacements Caused by Temporal Lobe Tumors.

Dr. Filiberto Rivero, Havana, Cuba, Classification of Tuberculosis.

Dr. Evarts A. Graham, St. Louis, will deliver the Caldwell Lecture of the American Roentgen Ray Society, Wednesday evening, on "Diagnosis and Treatment of Carcinoma of the Lung." Dr. James Ewing, New York, will give the Janeway Lecture of the American Radium Society, Friday evening.

Another Impostor.—A man about 55 or 60 years of age, 5 feet 11 inches tall, clean shaven, of sandy complexion and with large, irregularly placed teeth, is reported by a physician in the Middle West as being an impostor. The man in question speaks with what has been described as a middle western accent. He is neatly dressed, gives the impression of good breeding, and is convincing and apparently honest in his approach. He first called on Dr. A, a professor of pathology in a midwestern university, claiming to be the brother of Dr. B, another professor of pathology in an eastern institution. He made no attempt to ask Dr. A for money but he learned during the visit that Dr. A was about to go to Maine for a vacation. It appears the man then called on Dr. C, still another professor of pathology in an eastern medical school. His story to Dr. C was that he was the brother of Dr. A and had had an automobile accident and needed money to get to his brother, Dr. A, who was in Maine. Dr. C, knowing that the doctor was in Maine, gave the man sufficient for his alleged needs.

LATIN AMERICA

Typhus in Chile.—Dr. John D. Long, traveling representative of the Pan American Sanitary Bureau, spent the week of August 6-13 in Santiago, Chile, assisting Chilean health authorities in the investigation of an epidemic of typhus. Thousands of vagrants have been disinfected in public cleansing stations; public buildings have been scrubbed with disinfecting fluid or fumigated, and sanitary cordons have been thrown around the worst areas, newspapers report. Chilean newspapers have carried on campaigns of health education and urged the citizens to adopt better diets.

FOREIGN

Celebration of Ramazzini Tercentenary. — The Italian section of the Permanent International Commission on Labor Medicine and the Italian Society of Industrial Medicine will sponsor a celebration of the third centennial anniversary of the birth of Bernardino Ramazzini, October 4, at the Clinica del Lavoro, University of Milan, Italy. Representatives of most of the countries of Europe will attend and will discuss the influence of Ramazzini on industrial medicine in the various states. The following day a special meeting devoted to discussion of ancylostomiasis will be held at the clinic, with the foreign physicians as participants. In addition to the Milan celebration, the universities of Modena, Padova and Parma, with which Ramazzini was associated at various times, will hold ceremonies in his honor, October 6. American physicians who may be able to attend these observances are requested to notify Dr. Emery R. Hayhurst, 1108 State Office Building, Columbus, Ohio, member for the United States of the Permanent International Commission on Labor Medicine.

Executive Committee of Medical Society Resigns in Protest Against Regulations. — A circular issued by the executive committee of the Medical Society of Hamburg reads as follows:

The authorized representative of the federal commissar in the medical top organizations, Dr. W. Holzmann, has charged the executive committee to include the following regulations into the statutes of the organization:

1. Only Aryans can be full members, non-Aryans can remain associate members.

2. Only full members may have the floor for lectures or oral comments.

3. Only full members have the right to vote in society meetings.

The committee feels bound to the existing laws of the society, according to which a statute change of that sort is not possible; consequently the committee has decided to resign from its respective offices in a body.

For the period of transition the committee has empowered Messrs. Treplin, Scholz and Reye to assume charge of the business of the society.

THE COMMITTEE: KÜMMEL,
MARR, TREPLIN, SCHOLZ, REYE.

CORRECTION

Bernardino Ramazzini. — In THE JOURNAL, August 12, page 528, appeared a current comment relative to Ramazzini, in which the date of his birth was given as Nov. 5, 1633. Prof. Luigi Devoto writes from Italy to thank THE JOURNAL in the name of the International Commission of Industrial Medicine and of the Società Italiana di Medicina del Lavoro, and to say that Ramazzini was born not on November 5 but on October 4.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 26, 1933.

Spontaneous Subarachnoid Hemorrhage

It is only in recent years that attention has been called to the fact that spontaneous subarachnoid hemorrhage is a frequent cause of coma. In reviewing the literature in 1924, Dr. C. P. Symonds of Guy's Hospital found that in only eleven cases could the source of hemorrhage be traced to a ruptured aneurysm, but he expressed the view that with more careful dissection at necropsies a much greater number of cases would be found due to this cause. This opinion has been confirmed by later writers. Dr. L. P. E. Laurent, medical registrar of University College Hospital, has found in a series of nine cases, admitted to the hospital and recorded in its magazine that the hemorrhage could be traced to an aneurysm in no fewer than seven cases. It seems to be generally agreed that these aneurysms are congenital; i. e., that they arise at a point of weakness in the arterial wall because of an error of development, usually at the bifurcation of one of the branches of the circle of Willis. Such aneurysms are not infrequently found intact at necropsy. Only when they rupture are symptoms produced. This may occur at any age but most frequently in the fifth decade. Four of the present series fall within this, and the extremes of age were 26 and 80 years. The usual history is that the patient, while in good health, is seized with violent headache, collapses and passes into coma within a few minutes. Exceptionally the loss of consciousness is delayed for a few hours. The condition is usually fatal, but if the patient recovers he may say that he felt something give way in his head. The temperature is raised to about 100 F. The pupils may be contracted or unequal but are of little diagnostic value. There are signs of meningeal irritation, and Kernig's and Brudzinski's signs can often be elicited. The diagnosis is established by finding blood evenly distributed throughout the cerebrospinal fluid obtained on lumbar puncture. In regard to treatment, apart from the general measures that apply to any comatose patient, the point to be decided is when to perform lumbar puncture. It must first be done to settle the diagnosis. Afterward, if he is improving, the patient should be left to his own resources. But when a falling pulse rate indicates a dangerous rise of intracranial pressure, lumbar puncture should be performed for the relief of tension.

Prompt Action Against the Potato Pest

Prompt measures have been taken by the ministry of agriculture against the potato pest, known as the Colorado beetle. Aware of the devastation caused by the beetle in France and of its gradual approach to channel ports, an organization has been ready for twelve months to deal with any invasion. Notification of the presence of the beetle at Tilbury, was received at noon one day and the vanguard of "an arsenical army," dispatched during the night, was at work next morning. The arsenic is applied both as a powder and in liquid form. Large sprayers capable of treating eleven rows of potatoes at a time are engaged in a task that has to be completed in ten days. The effect is to poison the beetle without affecting the tubers. Should larvae be found on the ground, fumigation of the soil will no doubt be decreed. In countries where the beetle has established itself, it has been found virtually impossible to eradicate it and the only way to obtain potato crops is to spray during the whole season. The potatoes on the affected allotment have been dug up and the plants have been burned. The soil of the affected area has been fumigated with carbon bisulphide in order to destroy any beetles that may have gone into the ground. As a precaution against any beetles having spread farther afield, all the potato crops within a radius of ten miles are being carefully inspected.

A Successor to Sir Arthur Keith

The council of the Royal College of Surgeons is advertising all over the English-speaking world the vacancy caused by the resignation of Sir Arthur Keith as conservator of the museum and director of research. Advertisements have been sent not only to the English medical journals and the *Times* but to the Australian, New Zealand and Canadian medical journals and to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The duties include charge of the museum in all departments, the laboratory at Lincoln's Inn Fields and the Buckston Browne research farm. The conservator has to report to the Museum Committee on all objects offered either as donations or for purchase or in exchange to complete the catalogue of the collection and to continue and correct it from time to time. He has to register particulars of every specimen acquired by the college and to classify and arrange all additions to the collection. His whole time is to be at the disposal of the college and he is required to deliver lectures illustrated by the contents of the museum. The salary offered is $5,500 per annum with an honorarium for lectures, which amounts to about $500. Grants are also made to defray expenses in journeys abroad to inspect other collections. All applications must be received by October 7.

Unemployment Has No Unfavorable Effect on Nutrition of Workers

In the house of commons, the minister of health stated that no question gave him more anxious concern than that of nutrition. How was the country standing the long depression and diminution of its resources, both public and private? Unemployment inflicted much deprivation and hardship on large sections of the community. The ministry of health had carried out a widespread inquiry with the assistance of physicians and statisticians on the nutrition of the people. The figures showed that mortality in the whole country, and in the depressed areas in particular, was steadily declining—striking testimony to the maintenance of the general health. In 1932 the death rate of the country was 12 per thousand, equal to the average rate from 1921 to 1930. There was a remarkable decrease in the death rate of children. That was the brightest achievement of the country's health services. Since 1907 the infant mortality rate had been halved, a marvelous achievement for the infant welfare service.

There was no evidence of any increase of morbidity. The figures for such diseases as pneumonia and bronchitis were going down and, most important of all as a barometer of health and nutrition, the death rate from tuberculosis was falling. The death rate per million from all forms fell from 896 in 1931 to 838 in 1932. There had been a particularly marked fall in the incidence and mortality of nonpulmonary tuberculosis, which was the children's particular form. The figures of maternal mortality were less favorable. Maternal mortality last year was 4.11 per thousand births and this year 4.21. To deal with this matter, better education of the mother by antenatal care and of the midwife was essential. Meanwhile he would endeavor to raise the standard of maternity services. The number of infant welfare centers and antenatal clinics was steadily increasing. They increased by 250 between 1931 and 1932.

New Safety Devices for Miners: Hats and Gloves

The eleventh annual report of the Safety in Mines Research Board states that progress has been made in researches into the prevention of falls of ground and haulage accidents. A subject that is evoking interest in the industry is the study of

the value of protective equipment, such as hard hats, goggles, and special boots with a view to reducing the number of accidents that occur below ground. Accidents to the hands, feet and eyes, giving rights of compensation, number about 80,000 a year. Not all are caused by falls of ground and a considerable number could be eliminated by wearing protective equipment. Cases are reported in which workmen were saved from serious injury, if not death, by wearing a hard hat. The men usually experience no discomfort from wearing the hats and have expressed appreciation of the protection. The hats at present being experimented on are of American manufacture and expensive when they reach this country, but it is expected that suitable English hats of less cost will be available this year. The introduction of gloves is also meeting with success. They are being used by loaders at conveyor ends and by coal cutting machine men, rippers and pan shifters. So keen is the interest in gloves that there is no difficulty in carrying out experiments with them. Specially designed safety boots and goggles also are now available.

Physician Receives $60,000 for Loss of Use of Hand

At the Gloucester assizes a Cheltenham physician brought action against a publisher's salesman for injury in an automobile accident. Something went wrong with the physician's car and he got out and opened the hood and looked at the carburetor. The defendant was driving in the opposite direction and pulled out from behind a larger car and attempted to pass it. In so doing he struck the physician and, though the latter was seriously injured, he did not attempt to stop. He did not return to the scene of the accident until three quarters of an hour later, when he refused to give any explanation to the police. He alleged that the physician walked suddenly out from behind his car, which was untrue. The injury rendered the physician's right hand useless. He could not even write a prescription, and after a year there was no real improvement. Mr. Hey Groves, professor of surgery in the University of Bristol, stated in evidence that he could give no definite promise that the hand would ever be right again. The defendant stated that he had not the slightest idea that he had touched any one and therefore drove on. The jury awarded the physician $60,000 damages.

PARIS

(From Our Regular Correspondent)

Aug. 2, 1933.

Vaccination Against Filtrable Viruses

Professor Lignières, who has attracted attention by his persistence in being the only scientist who regards the B C G vaccine of Professor Calmette as not free from danger, has been carrying on, of late, research on vaccination against diseases produced by filtrable viruses. While his research has considered only diseases of animals, it has an important bearing on general biology and marks an advance over the methods heretofore employed. Vaccination against diseases caused by a filtrable virus, by means of a specific serum, confers a strong immunity, but the duration of the immunity is only a few days. The method employed consists in injecting under the skin an amount of specific serum that is rather large with relation to the weight of the subject, and, at another point, a small quantity of virus. This vaccination is performed in a single stage. It provokes reactions that are sometimes rather severe and leaves the organism entirely refractory to the virus employed. At present the number of diseases in which this method is effective is rather restricted. Lignières has made known to the Academy of Sciences a new method of vaccination against diseases due to a filtrable virus, the principle of which lies in the introduction of the virus into a small area of the skin, rendered resistant, but not refractory, to the virus by the intracutaneous and subcutaneous injection of small quantities of specific serum. Under these conditions the virus inoculated along with a few cubic centimeters of the serum should not become generalized; it is cultivated on the spot and produces immunity. If one is inclined to call this method of immunization serovaccination, one should not confuse the two methods, for several reasons, two of which may be mentioned: In the method of Professor Lignières, the quantity of serum to be employed is rather independent of the weight of the subject; it depends solely on the activity of the virus. The same quantity (1 cc.) may be used in aphthous fever for a calf as for an adult animal. In serovaccination the quantity of serum to be employed depends on the weight of the subject. For example, in swine plague, from 15 to 20 cc. of serum is sufficient for young animals, whereas adult animals require from 60 to 80 cc. On the other hand, one sometimes observes violent reactions following serovaccination with the method of Professor Lignières but, if it has been properly done, immunity is acquired without elevation of temperature, without the slightest change in the general condition and without any specific manifestation, which is one of the most peculiar and newest features of this vaccination. The experiments of Lignières have included thus far three diseases of animals due to a filtrable virus. The results have been excellent. All the animals vaccinated were immunized with but few exceptions in the case of aphthous fever in bovines. All the controls not vaccinated either succumbed or acquired the disease. The method has as yet one drawback; namely, in order to obtain absolute immunity it is necessary to apply three vaccinations at intervals of from ten to twelve days. The result is worth the trouble; for the method of Dr. Lignières confers immunity for several months and does not cause the slightest reaction. The method would be much more valuable if it could be applied to diseases in man. But since the research involves the inoculation of a living virus, it will be readily understood that great caution must be exercised. Lignières thinks that careful experiments on monkeys will possibly enable him to discover the "laws" governing harmless and effective vaccinations, notably for poliomyelitis and yellow fever.

The Title of Doctor of Medicine in Danger

In France, the title of doctor is bestowed by the facultés de lettres, the facultés de droit and the facultés de sciences, as well as by the facultés de médecine. But in current speech the title doctor is commonly reserved to doctors of medicine. When one speaks of doctor, without further qualification, only a physician is meant. For this reason, persons desiring to practice medicine illegally always seek to procure a doctor's title given by some other institution, in order to create confusion in the public mind. The pharmacists, most of whom prescribe illegally to the public frequenting their shops, have finally succeeded in getting a doctor's diploma established, with which they make considerable showing before their clientele. But the law requires them to state plainly that they are doctors of pharmacy. There are also doctors of veterinary medicine, some of whom likewise seek to deceive the public. The diploma of veterinarians must, however, be bestowed by a faculté de médicine before an examining board comprising professors of physiology, bacteriology, hygiene and materia medica, together with professors of a recognized large veterinary school. Here too the law requires that the holder of the veterinary title shall announce himself as a "doctor of veterinary medicine"; but that fact does not prevent him, if occasion arises, from giving consultations to the public, which applies to him the term "doctor." The dentists who have not pursued medical studies are also seeking to get a doctorate of dental science established, but thus far the dentist-physicians have succeeded in preventing this and have suggested that, on the contrary, the practice of odontology be reserved solely to doctors of medicine who have received special supplementary instruction. The syndicates of the dentist-physicians and the syndicates of the nonmedical

dentists are at loggerheads, both having powerful political allies, while the minister has not found it convenient to tackle the question. More serious trouble has arisen. A group of practitioners of dental electroradiology has established a technical school, which also is granting a doctor's diploma, and the holders, without having pursued medical studies, can easily practice medicine illegally by treating patients directly, without the latter having been so much as seen by a doctor of medicine, as the law requires. The medical syndicates have protested against this growing abuse; but not only does the minister fail to take account of their protests but the syndicate of the dental radiologists even went so far as to organize an official dedication of the school, at which the various ministers, the municipal council of Paris and the prefect of police, not comprehending the situation, were represented by delegates, who delivered a number of addresses in praise of the new institution and the services it was rendering the people. Thus, they simply encouraged the illegal practice of medicine.

BUCHAREST

(From Our Regular Correspondent)

Aug. 24, 1933.

The Improvement of School Medical Inspections

A movement is on foot to extend the methods of school inspection. It has been initiated by Dr. A. M. Marinescu, who suggests the establishment of national, state and local boards of school hygiene under the direction of specially qualified medical health officers. The functions of a national board would be to provide plans for sanitary school buildings and school furnishings, to conduct civil service examinations for school physicians, and to publish instructions from time to time. The state boards should have the power to choose proper sites for schools, to frame and enforce laws governing school hygiene, to close insanitary school buildings, to insure the exclusion of degenerate or criminal children from state schools, and to keep records of the progress and development of school children. The local board should consist of business men and physicians. They should keep records and keep in touch with the national and state boards. Every child in each school should undergo a complete physical examination. The functions of the board would also include the distribution of literature bearing on hygiene and also the instruction of parents as to the needs of each child, based on the physical examination.

Reactions Following the Administration of Arsenic Preparations

Dr. Leontine Munteabu, director of the public health laboratories at Oradea, at a meeting of the local medical society, discussed the reactions sometimes associated with the arsenical treatment of syphilis. The cause may be the toxicity of the drug, a broken vial whose contents are oxidized, using a vial which has been open for one or two days, or it may be in the method of application or the intolerance of the subject or all combined. The operator should take into account the reaction to previous injections, whether the disease is recent, and whether there has been any indication of a reaction on the part of the nervous system or viscera. The urine should be examined before every injection, and special caution is necessary when it contains bile pigments, albumin or much sediment. The practice of using big doses is highly dangerous and must not be attempted. The injection should always be made extremely slowly, and the least untoward sign should be watched for. The physician should keep his record of these cases written in full to date, and a solution of epinephrine and sodium thiosulphate should always be at hand to combat any sign of intolerance, particularly angioneurotic reactions.

Increase in Number of Cases of Neurasthenia

At a recent meeting of the Medical Society of Bucharest, Dr. Ramniceanu expressed the opinion that cases of neurasthenia were rapidly increasing in number. He showed that a definite percentage of the symptoms were illusory or hallucinatory in character and stated that practically every patient had one symptom, complaint, apprehension or fear, which predominated over all others. When this one predominating symptom was overcome or removed by education, by medicinal treatment or by psychoanalysis, all lesser symptoms either abated or were entirely relieved. He cited cases from his own practice, giving the chief obsession in each case and the educational or other means used to remove it. In Dr. Ramniceanu's view the majority of patients were made worse by the administration of modern drugs. It is essential to treat the mind rather than the body.

Radium at the Bucharest University Hospital

At the quarterly meeting of the board of the university clinics it was reported that in response to urgent representations the purchase of 40 mg. of radium for the treatment of cancer had been authorized, in addition to 25 mg. already on hand. This amount has cost about 500,000 lei (approximately $4,000). Last year more than 300 cancer cases were treated as inpatients and many more as outpatients.

BERLIN

(From Our Regular Correspondent)

Aug. 7, 1933.

Relation of Orthopedics to Surgery

A discussion has arisen between surgeons and orthopedists concerning the independence of the latter with respect to university instruction. Some time ago, the Deutsche Orthopädische Gesellschaft submitted to the convention composed of delegates of the medical faculties its views on the organization of medical courses and the requirements for the final examinations. It was emphasized that orthopedics has developed into an independent subject, as is evidenced by the creation of special chairs, extraordinary professorships and "guest courses" at the various universities. Reference was also made to the activities in connection with the rehabilitation of the war injured; the prevention and cure of crippling in association with welfare aid for cripples, which is being administered in more than eighty sanatoriums, with 10,904 beds, together with various clinics with more than 1,000 beds in all; the collaboration in the care of the health of school children, and, particularly, to the combating of bodily defects and deformities in the oncoming generation. According to a recent census there are more than 100,000 cripples in Germany. General practitioners therefore should acquire the most needed orthopedic knowledge. It was suggested that the representative of accident surgery be made "second examiner" in surgery and that in institutions where there is a special representative of orthopedics he should be selected alternately as the examiner in surgery. Attention was called to the solution of the problem in other countries, notably the United States.

The Deutsche Gesellschaft für Chirurgie has now replied to the foregoing demands, which are supported also by the Verband der Berufsgenossenschaften. The plans of the orthopedists are to be subjected to a critical review and the competences of the three disciplines in question are to be sharply demarcated. In view of its history and accomplishments as a main clinical subject, surgery demands that its solidarity be preserved and not broken up into a number of specialties. It is stated that orthopedics has developed into an independent branch of surgery. Its field comprises the disturbances and disorders of the equilibrium and the motor apparatus, and the

prevention and cure of crippling. It is desirable that the larger universities should have a chair of orthopedics. Questions that arise in occupational accidents concern all fields of medicine; but 90 per cent of persons injured in occupational accidents require surgical treatment; for surgery, from the very nature of its field of operation, has always included the surgery of accidents and must continue to do so. Hence, the Deutsche Gesellschaft für Chirurgie warns against the creation of special chairs for the field of medicine dealing with accident insurance and the care of persons injured in occupational accidents. On the other hand, it appears to be in order for the central government to appoint an instructor to give a special course in the "surgery of accidents," as an inherent part of the work of a university surgical clinic.

In view of the present burden of students, it is not advisable to introduce new courses of lectures in orthopedics and special examinations in orthopedics, as the society of orthopedists has demanded. At the government examination, the ordinarius in surgery and a second representative of the surgical specialty should function as the chief examiners, although the instructor in the surgery of accidents might well assist. In institutions where a representative of orthopedics has been serving as an examiner, he may continue to serve in that capacity in connection with the tests in surgery.

The Tribal Distribution of Mental Disorders

The most important types of psychic constitutions are found apparently among all races; but their frequency varies. Ernst Kretschmer of Marburg, who has devoted himself to problems of constitution, calls attention in the *Münchener medizinische Wochenschrift* to the psychiatric variant formations in highly trained families and to characteristic psychiatric racial differences in the populations of Swabia and Old Hesse. In the latter, genuine manias are seldom observed, the few cases found there having originated mostly in other tribes. Here, too, the so-called hypomanic temperament factors are infrequent. The difference, as compared with Swabian patients, for example, is unquestionable; among the Swabians the manias are much less frequent than the depressions but they exist in considerable numbers. Also in paranoiacs, and especially in the "prophets" and founders of sects, with far-reaching programs and speculations, Kretschmer found a difference based on racial origin. He found this group in Swabia to be more numerous and more productive. Here, too, the parallel relationship to the healthy racial aptitudes was evident. Among the intellectual traits of the Swabians, the poetic and philosophical endowments form the largest group and the speculative, metaphysical trend is especially prominent. The more learned the victim, the less typical the psychosis. Even psychoses caused by external factors may present aspects difficult to understand. This association of a psychosis originating in heredity goes much deeper than is commonly assumed. It is not that a morbid process of a definite type penetrates, like a foreign body, different persons and is then colored and changed brighter or darker by them; on the contrary, the fundamental soil, with its racial and familial characteristics, pushes out the peculiar variants of endogenous psychoses from its innermost self. The frequency and special type of a given psychosis appear, among the various tribes, closely connected, from the standpoint of the genes, with the frequency and development of the corresponding factors of the healthy hereditary endowments and temperaments of those tribes.

Aid for Cancer Patients

An agreement was reached, several years ago, between the medical profession and the leagues of the krankenkassen, with the object of providing more aid for cancer patients. Physicians who treated cancer patients made a report to a center connected with the krankenkassen, and through this center aid for patients was provided. To make this welfare aid more comprehensive, a working merger has now been effected, which includes the city, the carriers of social insurance, the medical league of Greater Berlin, the chamber of physicians, the police department, private benevolent hospitals and the faculty of medicine, under the direction of the municipal public health service. This merger provides also for a notification of all cases.

Consultation Centers on Marriage

In THE JOURNAL, August 12, page 535, reference was made to the changes in the marriage consultation centers. One of the first of the new marriage consultation centers, that established by the bureau of eugenics in Thuringia, has been opened. Any person may avail himself of these consultations without charge. Married persons may seek information as to whether their future children will be healthy and possess good aptitudes or whether, by reason of hereditary taints, it would be better to have no further children. Emphasis is laid on the need of young people who are single seeking advice as to whether they are adapted to marriage. Engaged couples are given information as to whether the choice of a partner is favorable from the eugenic point of view, and whether the contemplated marriage is likely to be made unhappy by the later outbreak of hereditary disease. At the first visit to the consultation center, all applicants are instructed how to proceed to secure documentary evidence in regard to their family history. Emphasis is laid on a knowledge of the four grandparents and their descendants, including information in regard to their diseases, peculiar manifestations, performances, and the like. For the determination of Aryan or foreign derivation it is desirable to know the personal history of all progenitors back through the sixteen ancestors of the fourth generation.

The First Course in Race Hygiene

In August, the first course in race hygiene for physicians was organized at the University of Halle. More than 500 physicians, about one third of all the physicians in that area, are taking the course. At the end of one or two years, the government medical commissar has announced, all physicians of Germany will be required to furnish evidence that they have taken such a course. In Saxony a law to that effect has already been enacted; Prussia and the remaining German *länder* will soon follow. Privatdozent Kürten, the director of the course, called attention in his introductory lecture to the trail blazed by America in the field of race hygiene. Measures that scientists of all countries have long since demanded but that have never been carried out Germany will now make a reality. The course as organized consists of: introduction to ethnology, theory of hereditary transmission in man, race hygiene and the recent legislative enactments in Germany in this field.

The German Eugenic Society

Prof. Dr. Ernst Rüdin of Munich, who is associated with the Deutsche Forschungsanstalt für Psychiatrie, has been appointed a representative of the federal ministry of the interior in the Deutsche Gesellschaft für Rassenhygiene. He has assumed the direction of the society and has moved its headquarters from Berlin to Munich. The previous chairman was Prof. Eugen Fischer, director of the Kaiser Wilhelm-Institut für Erblichkeitsforschung and the newly elected rector of the University of Berlin. Rüdin is well known because of his research on the hereditary transmission of mental disorders, which he carried out as director of the genealogical department of the institute. Through the recent death of the American James Loeb, this institution received a bequest of $1,000,000, as a culmination of many previous gifts during the lifetime of its benefactor.

Marriages

ARTHUR DENTON SEYBOLD, Plainfield, N. J., to Miss Anne Marie von der Groeben of Hanover, Germany, July 8.

LEO HYMOVICH, Stamford, N. Y., to Miss Lillian Estelle Berman of Grand Concourse, September 3.

JOHN CROZIER FAWCETT, Devils Lake, N. D., to Miss Clara Edith Schrag of Starkweather, July 26.

HENRY A. SCOVILLE, Union City, Mich., to Miss Winifred Williams of Grand Rapids, June 28.

JACKSON A. SEWARD, New York, to Mrs. Maidee Hooton Buck of Montclair, N. J., in June.

JAMES NORTH EVANS, Columbus, Neb., to Miss Roberta Prince of Grand Island, recently.

ROBERT SYDNEY SMITH, East St. Louis, Ill., to Miss Helen Kempster of St. Louis, June 10.

P. HARVIE MACFARLANE, Chisholm, Minn., to Miss Marcia Daigneau of Austin, in August.

JAMES HARDIN WALL, White Plains, N. Y., to Miss Louise Holt Baker, July 1.

WILEY DENNIS WOOD, Camp Hill, Ala., to Miss Linda Mae Sullivan, June 28.

Deaths

Theodore C. Lyster ✠ Brigadier General, U. S. Army, retired, Los Angeles; University of Michigan Medical School, Ann Arbor, 1899; veteran of the Spanish-American War; entered the army as an assistant surgeon in 1900; was promoted through the various grades to that of lieutenant colonel in 1917 and in 1919 was retired as a colonel; by an act of Congress in June, 1930, he was promoted to brigadier general, retired; in 1917-1918 was chief of aviation and professional services in the Surgeon General's Office, for which he was awarded the Distinguished Service Medal; for four years he was a director of yellow fever elimination work for the Rockefeller Foundation; at one time, chief of eye, ear, nose and throat, Ancon (Canal Zone) Hospital, and chief of eye service, University of the Philippines, Manila; in 1913, during the American occupation, was chief health officer of Vera Cruz, Mexico; member of the American Laryngological, Rhinological and Otological Society and the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; past president of the Southern California Medical Association; associate clinical professor of ophthalmology, University of Southern California School of Medicine; member of the eye service of the Good Samaritan, Los Angeles County, St. Vincent's and Hollywood hospitals; aged 58; died, August 5, of coronary sclerosis and angina pectoris.

Nellis Barnes Foster ✠ New York; Johns Hopkins University School of Medicine, Baltimore, 1902; secretary of the Section on Practice of Medicine, American Medical Association, 1920-1922, and chairman, 1922-1923; associate professor of medicine and at one time instructor and assistant professor, Cornell University Medical College; instructor and associate in biologic chemistry, Columbia University, 1906-1912; professor of medicine at the University of Michigan, Ann Arbor, and director of the medical clinic, University Hospital, 1917-1918; member of the Association of American Physicians and the American Society of Clinical Investigation; served during the World War; on the staffs of the New York Hospital and the Woman's Hospital, New York, the Englewood (N. J.) Hospital, the Mount Vernon (N. Y.) Hospital and the Barrett Memorial Hospital, Middletown, N. Y.; aged 58; died, August 20, at Camden, Maine, of coronary occlusion.

Harvey Gilmer Mudd ✠ St. Louis; St. Louis Medical College, 1881; professor emeritus of surgery, Washington University School of Medicine; member of the American Surgical Association and the American Association of Genito-Urinary Surgeons; fellow of the American College of Surgeons; member of the medical reserve corps and chairman of the medical section of the State Council of Defense during the World War; for many years on the staffs of St. Luke's Hospital and the Barnard Skin and Cancer Hospital; aged 75; died, August 16, in the Charles Gate Hospital, Boston, following an operation for prostatitis.

Powell C. Fauntleroy ✠ Colonel, U. S. Army, retired, Washington, D. C.; University of Virginia Department of Medicine, Charlottesville, 1893; entered the army as an assistant surgeon in 1895; veteran of the Spanish-American War; was promoted through the various grades to that of colonel in 1917; retired for disability in line of duty in 1922; fellow of the American College of Surgeons; aged 63; died, July 30, at the Walter Reed General Hospital, of arteriosclerosis, myocarditis and cerebral hemorrhage.

Walter James Taylor, Port Angeles, Wash.; Western University Faculty of Medicine, London, Ont., 1908; member of the Radiological Society of North America and the Washington State Medical Association; past president of the Clallam County Medical Society; at one time state senator; on the staff of the Port Angeles Hospital and Sanitarium; aged 56; died, July 19, of encephalitis.

Lucius Crocker Pardee ✠ Evanston, Ill.; Northwestern University Medical School, Chicago, 1894; formerly instructor and associate professor of dermatology at his alma mater; on the staff of the Evanston (Ill.) Hospital and formerly on the staff of the Wesley Memorial Hospital, Chicago; aged 64; died, August 27, of angina pectoris and pulmonary edema.

Raymond Marvin Graham, Clarksville, Tenn.; St. Louis College of Physicians and Surgeons, 1918; president of the Montgomery County Medical Society; member of the Tennessee State Medical Association; on the staff of the Clarksville Hospital; aged 51; died, July 31, of carcinoma of the right lung with metastasis to the left frontal lobe of the brain.

Alfred Marvin Hall, Chicago; Chicago Medical College, 1889; associate professor (extramural) of ophthalmology, Northwestern University Medical School; on the staff of the Passavant Hospital, and formerly on the staff of the Children's Memorial Hospital; aged 71; died suddenly, August 27, in Nelma, Wis., of coronary thrombosis.

Holder Crary Kirby ✠ New Bedford, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1900; fellow of the American College of Surgeons and member of the Associated Anesthetists of the United States and Canada; formerly surgeon to the Crary Clinic Hospital; aged 58; died, July 26, of a self inflicted bullet wound.

Henry Augustus Hendrickson, Atlantic Highlands, N. J.; University of the City of New York Medical Department, 1889; formerly mayor, and president of the board of health of Atlantic Highlands; aged 66; died, July 27, in the Monmouth Memorial Hospital, Long Branch, of cerebral hemorrhage, following an operation.

William Emery Harrington ✠ Depew, Okla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; served during the World War; aged 58; died, August 18, at the University Hospital, Oklahoma City, of heart disease.

Norman W. Hole, Alliance, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1898; member of the Ohio State Medical Association; on the staff of the Alliance City Hospital; aged 64; died, August 1, of heart disease.

William Lawrence Shannon, Cincinnati; Medical Department of the University of Cincinnati, 1913; member of the Ohio State Medical Association; served during the World War; aged 46; died, July 29, of hypertension, nephritis and uremia.

Harry Waldemar Boice, Kings Park, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1908; aged 51; on the staff of the Kings Park State Hospital, where he died, August 9, of hypertrophic cirrhosis of the liver.

Waitman T. Willey ✠ Baltimore; Atlantic Medical College, Baltimore, 1898; Baltimore Medical College, 1907; aged 57; on the staff of the Church Home and Infirmary, where he died, July 29, of carcinoma of the stomach.

Herbert Emmons Stockwell, Pittsfield, Mass.; University of Vermont College of Medicine, Burlington, 1897; member of the Massachusetts Medical Society; aged 63; died, July 30, of Parkinson's disease and coronary occlusion.

Benjamin G. Gregg, Florence, S. C.; University of the City of New York Medical Department, 1892; member of the South Carolina Medical Association; aged 72; died suddenly, August 7, of heart disease.

Van Harlingen Coles, Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1899; member of the Tennessee State Medical Association; aged 61; died, August 12, of coronary thrombosis.

Clinton Colfax Cady ✠ Alden, Iowa; Drake University Medical Department, Des Moines, 1900; served during the World War; formerly mayor of Alden; aged 63; died, July 27, of cerebral hemorrhage.

Thomas William Connolly ✠ San Francisco; Cooper Medical College, San Francisco, 1902; veteran of the Spanish-American War; aged 58; died, August 6, in St. Joseph's Hospital, of heart disease.

Allen Sherman Martineau ✠ Los Angeles; University of Pennsylvania School of Medicine, Philadelphia, 1925; served during the World War; aged 36; died, July 29, of a self inflicted bullet wound.

Raymond J. Harris ✠ Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1894; on the staff of the Broad Street Hospital; aged 61; died suddenly, August 9, of cardiorenal disease.

Frank Kilburn, Presque Isle, Maine; Jefferson Medical College of Philadelphia, 1879; member of the Maine Medical Association; aged 79; died, July 11, of uremia, arteriosclerosis and nephritis.

Joseph Spencer Hill, Mountpleasant, Tenn.; Missouri Medical College, St. Louis, 1877; for many years member of the board of education; aged 79; died, August 3, of cerebral hemorrhage.

William F. Dickson ✠ Chicago; Faculty of Medicine of Trinity College, Toronto, Ont., Canada, 1882; on the staff of the Woodlawn Hospital; aged 77; died, August 26, of heart disease.

Edward L. Shepard ✠ Brandon, Wis.; Chicago Homeopathic Medical College, 1890; on the staff of St. Agnes' Hospital, Fond du Lac; aged 72; died, August 7, of heart disease.

Joseph Luther Remsburg, Lamoille, Ill.; State University of Iowa College of Medicine, Iowa City, 1878; aged 85; died, July 29, in the Harris Hospital, Mendota.

Horace Darling Seymour, Warren, R. I.; Tufts College Medical School, Boston, 1904; health officer of Warren; aged 50; died suddenly, August 6, of heart disease.

Thomas M. Gairdner, Waco, Neb.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1886; aged 70; died, July 27, in a hospital at Philadelphia.

Dallas W. Chesnutt, Wilmington, N. C.; Leonard Medical School, Raleigh, 1903; aged 55; died, August 2, of malignant tumor of the right side of the neck.

C. Hardin Hurst, Oakesdale, Wash.; Kentucky School of Medicine, Louisville, 1907; aged 48; died, July 30, of injuries received in an automobile accident.

Gustav A. Bonschur, Woodhaven, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1885; aged 76; died, July 22, of chronic nephritis.

Frank W. Greiner, Seattle; Chicago Homeopathic Medical College, 1896; aged 70; died, July 26, of coronary thrombosis, hypertension and arteriosclerosis.

Jarrot Laban Rollins, Colfax, Calif.; University of Missouri School of Medicine, Columbia, 1883; aged 74; died, August 12, of coronary disease.

Austin G. Case, Denver; Long Island College Hospital, Brooklyn, 1873; aged 86; died, July 27, of myocarditis and adenoma of the prostate.

James Francis Cropp, Walla Walla, Wash.; Jefferson Medical College of Philadelphia, 1878; aged 79; died, May 9, of cerebral hemorrhage.

William James Galbraith, Inglewood, Calif.; Cincinnati College of Medicine and Surgery, 1880; aged 73; died, in July, of cerebral hemorrhage.

George Franklin Woodill, Lynn, Mass.; College of Physicians and Surgeons, Boston, 1890; aged 65; died, August 1, of Hodgkin's disease.

Edward W. O'Connor, Philadelphia; Medico-Chirurgical College of Philadelphia, 1899; aged 65; died, July 26, of vasomotor paralysis.

George Woodworth Lougee ✠ Lynn, Mass.; Medical School of Maine, Portland, 1883; aged 74; died, August 4, of angina pectoris.

Thomas Hugh Barber, Colorado, Texas; Barnes Medical College, St. Louis, 1898; aged 69; died, May 26, of uremia and arteriosclerosis.

M. Raymond Rice, Omaha; John A. Creighton Medical College, Omaha, 1909; aged 45; died, July 15, of carcinoma of the tongue.

Frank Bright, Hendersonville, N. C.; Chattanooga (Tenn.) Medical College, 1892; aged 67; died, August 7, of angina pectoris.

Charles Wesley Burgess ✠ Bethany, Mo. (licensed, Missouri, 1884); aged 89; died, August 1, of cerebral thrombosis.

Bureau of Investigation

MODERN RESEARCH SOCIETY

The Questionnaire Nuisance Again

Physicians have recently been receiving on the stationery of the Modern Research Society, 135 East 42d Street, New York City, a form letter signed "F. Stanley Newbery, Jr., Supervisor." The letter asked that the physician do the Modern Research Society "a small favor." It went on to state that recent investigations which this "Society" had made of "shaving methods" had disclosed that there were a surprising number of men who were "suffering from irritations and infections in or near the bearded area of the face and neck." It therefore had occurred to the "Society" that these irritations might be caused in part, at least, by "faulty shaving methods." Having arrived at this well-thought-out conclusion, the Society would "like to have something approximating a consensus of professional opinion as to how much "cause-and-effect relationship" there was between faulty shaving methods and the irritations previously referred to. And more to the same effect. On the reverse side of this letter there were such questions as the following, which were to be answered by the physician "Yes" or "No":

"Does the scraping action of faulty shaving tend to irritate the skin?"

"Is there a greater tendency with wrong shaving methods to abrade the skin and so leave openings for the possible entrance of infection?"

"Does continued shaving with wrong methods, and the resultant irritation, tend to lessen the self-protective action of the normal skin and thus cause skin trouble?"

Such questions—that obviously could have been answered by the butcher, the baker or the candlestick-maker just as easily as by a man with medical training—were submitted to physicians, who were asked to take their time in answering this twaddle. But the last question propounded was the *pièce de résistance* of the questionnaire. It read:

"Have you seen any cases of any of the following which, in your opinion, might well have been caused or aggravated by the abrasive, irritant action of faulty shaving:

Folliculitis	Cancer of skin
Eczema	Herpes zoster
Dermatitis seborrhoeica	Ingrowing hairs
Tinea barbae	Acne vulgaris
Impetigo contagiosa	Boils
Sycosis vulgaris	Carbuncles
Tuberculosis of skin	Injured blood vessels
Anthrax	Keratosis senilis
Erysipelas	Warts

It should be patent, even to the non-medically trained, that any of the conditions listed would, at least, be "aggravated" by the "abrasive, irritant action of faulty shaving."

One physician—Dr. Livingstone L. Lewis of Hoboken, N. J.—who sent in this material enclosed with the questionnaire an advertisement from the New York *World-Telegram* of July 24, 1933. As Dr. Lewis laconically put it:

> "They're at it again. It would seem that there might be some connection between this letter and the advertisement which I have enclosed."

The advertisement in question was one dealing with Gillette Blue Blades and was headed in large black type: "Can Faulty Shaving Cause Serious Skin Trouble?" The advertisement then went on to answer the question that it propounded in a most emphatic affirmative, claiming that "this is the statement of the Gillette Skin Clinic as issued by its head, an eminent dermatologist." The balance of the advertisement went on to descant on the virtues of the Blue Blade of Gillette.

The earliest record in the files of the Bureau of Investigation of any "Modern Research Society" is that of an advertisement appearing in a cheap health-fad magazine known as *Health and Life* which had for its editor an individual who called himself Bernard Bernard, but whose real name, according to the federal authorities, was Trappschuh. Incidentally, later Trappschuh and another person got into the toils of the federal law when they exploited a fraudulent device for the alleged purpose of increasing the height of those who desired to be tall. This was described in detail in this department of THE JOURNAL under the title "The Glover Height-Increasing Fraud" July 6, 1929.

The Modern Research Society advertisement in *Health and Life* gave its address at that time as 43 West 16th Street, New

York City. The advertisement dealt with a mail-order course in psychoanalysis! The next record of a Modern Research Society was a full-page advertisement in *Physical Culture* for April, 1923. It was then operating from the same address and was selling a line of booklets entitled "The Secret of Sound Sleep." Later the Modern Research Society matter bobbed up when the Bureau of Investigation looked into the piece of quackery sold under the name of "El Zair," which also operated from 43 West 16th Street, New York City. There were a number of concerns of dubious standing occupying the same quarters as El Zair—the "Thompson-Barlow Company," the "Thompson Feature Service," the "Modern Research Society," the "Corrective Eating Society," and others. The article on El Zair was published in this department of THE JOURNAL, Sept. 1, 1923.

The concern was next heard of in a letter received from the National Vigilance Committee of the Associated Advertising Clubs of the World in August, 1925, asking for information on the "Airflex Arch Corrector Treatment," which was alleged to be put out by a Modern Research Society of 131 West 30th Street, New York City. The Airflex device, if the advertising is to be believed, was a God-send to those suffering from flat feet.

In January, 1928, the Modern Research Society, still at 131 West 30th Street, New York City, was sending out a questionnaire to laymen, asking for information regarding toilet soaps.

In 1930 the Modern Research Society had again moved and was sending out letters from 127 West 30th Street, this time to physicians. The questionnaire dealt with the efficacy of sodium bicarbonate as an antacid. The physician was asked whether he prescribed it, whether he considered it harmful, whether he had observed any evidence of the claim said to be made by certain clinicians that sodium bicarbonate may cause edema, alkalosis, malnutrition, kidney and bladder trouble, etc., and, finally, the physician was asked that if he didn't prescribe sodium bicarbonate, just "what indigestion remedies" he did prescribe.

About six months later, in December, 1930, another questionnaire on the stationery of the Modern Research Society went out to physicians. This time they were anxious to get the physicians to help them to determine the value of saline laxatives as obesity cures. At that time the National Better Business Bureau was appealed to and asked to find out just who was behind the Modern Research Society of 127 West 30th Street, New York City. The National Better Business Bureau dictated a letter of inquiry to the concern, but they got no answer, although obviously the letter was delivered. They then had an investigator call at this address, who reported that he found no such concern as the Modern Research Society listed on the directory board of the building and when he went to the office of the building he was told that the Modern Research Society had no offices in the building and had been out of business for over a year. This, it is to be remembered, was at the very time the Modern Research Society was sending out questionnaires to physicians, using that address, and also at the very time that letters which were sent to that address were being delivered to somebody.

Now, in August, 1933, comes the razor-blade questionnaire from the Modern Research Society at 135 East 42d Street. From investigation it appears that the Modern Research Society is located in the same offices with an advertising agency, Ruthrauff and Ryan, Inc.; that F. Stanley Newbery, Jr., is said to be listed in the agency list of the *Standard Advertising Register* for August, 1933, as the "Director of Research" for Ruthrauff and Ryan, and that Ruthrauff and Ryan are said to act as advertising agents for the Gillette Safety Razor Company.

However, let us not throw all of the blame for this questionnaire nuisance on advertising agents who have found in the medical profession a very tolerant and easy-going group. It is quite obvious that advertising agents would not create phoney "societies" nor spend money on printing, stationery and postage in attempting to get professional advice for nothing or to get physicians to answer inane questions, also for nothing, unless there were a pretty large number of medical men who, instead of throwing these effusions in the waste-basket where they belong, took the trouble to answer them.

Correspondence

"FAULTY BLOOD GROUPING DUE TO AUTO-AGGLUTININS"

To the Editor:—In THE JOURNAL, July 15, is an article by Manheims and Brunner on faulty blood grouping due to auto-agglutinins. One precaution to avoid such false interpretations is suggested in the form of cross-matching before the transfusion. However, faulty blood grouping, even when detected in time to avert a serious transfusion reaction, is a cause of delay, expense and embarrassment; occasionally the patient may suffer by the delay. At the Brooklyn Jewish Hospital, where all transfusions are performed by the Department of Pathology under the continual personal supervision of Dr. Silik Polayes, it is the rule that when an AB blood is found it is immediately tested for auto-agglutination by the mixing of one drop each of the patient's cell suspension and patient's serum at room temperature. If agglutination is present, regrouping is performed with washed cells. Careful attention to such and similar details will bring to a minimum the occurrence of transfusion accidents.

EMIL ROTHSTEIN, M.D., New York.

HEIGHT-WEIGHT-AGE TABLES FOR CHILDREN

To the Editor:—The editorial on "Height-Weight-Age Tables for Children" (THE JOURNAL, July 29) will do much to mark the end of an epoch of error. The reliance on weight as an indication of malnutrition has in the last decade and a half been the cause of a great deal of waste of energy and funds in public health propaganda. That it has now been deserted by its proponents is welcome news.

One might venture to reenforce the lessons with which you conclude your able review.

There is no one correct average weight for any age or height and one might venture to predict that there never will be. There is no one index of malnutrition, because malnutrition, whatever it may be, certainly is not a single physiologic or clinical entity.

There are at least three major elements in weight. One is anthropological. The deep-breasted, broad-shouldered, brachycephalic Alpine type child should be rated by a standard different from that appropriate to the long-waisted, "linear" dolichocephalic riparian type child. Weight depends on "build." For this fact we are indebted to Boas, Kretschmer, Stockard, Smith and others.

The second is developmental. Weight status varies with the stage of development from birth to adolescence. The child passes through alternate periods of roundness and leanness. This was pointed out by Stratz. These alternations are normal. They follow periods of development rather than periods of years. These are physiologic ages studied through by Boas and myself and more recently by Todd and Furfey. Carrell has followed in his recent discussion on Physiological Time. Furfey has brought out a useful term, Developmental Age, and coined a new developmental index. Weight depends in part therefore on the developmental stage. This is what the weight chart makers do not consider.

The third major element in weight is physiologic or pathologic. But weight variations are not pathognomonic, nor is it true that subnormality invariably shows in underweight and that supernormality is indicated by overweight or by average weight. This is clinically wrong, a half-truth which will entrap only the unwary.

The overweight Froelich syndrome child, like the condensed milk-fed baby, has frequently won health prizes in the past,

and the height-weight-age chart has supported the choice, while the lean, hard-playing, hard-fisted neighborhood pest was underweight.

Although most of this was explained to the proponents of the original height-weight-age charts fifteen years ago, the simplicity and popular appeal of the weight chart swept aside the real considerations of scientific fact, and scientific facts, like the "Gods of the Copy Books Maxims" in Kipling's poem "limp up to explain it once more."

We have now led the public up the hill and down again but we may have learned something by the trip. The next fifteen years may give us an opportunity to prove it.

C. WARD CRAMPTON, M.D., New York.

HOW A SEED SUPPLEMENTED CHEMICAL ANALYSIS

To the Editor:—It was observed that certain students in a high school in one of the larger cities frequently acted in an abnormal manner. They were erratic in their behavior. Periods of extreme activity were followed by lassitude and drowsiness. The pupils of the eyes were dilated. Their conversation was irrational and frequently boastful. The police investigated and found no evidence of alcoholism. The matter was turned over to the narcotic squad. Three of the students ultimately confessed that they often smoked cigarets for each of which they paid 20 cents. A mild third degree elicited the names of the venders.

Two men, one colored, were subsequently arrested. A number of cigarets and a quantity of a coarse greenish vegetable substance were found in their possession. Both the cigarets and the coarse powder were sent to these laboratories for examination.

The powder consisted of coarsely broken greenish vegetable matter composed in the main of more or less agglutinated fragments of leaves, small stems, pistillate flowers, and numerous resin masses. Soaked in water, the leaflets were evidently linear lanceolate with serrated edges and were slightly hairy.

The alcoholic extract was a bright yellowish green with a peculiar druglike odor and flavor. It also contained a volatile alkaloid.

The sample contained about 15 per cent of ash, which carried both calcium and potassium salts. When slightly burned or scorched, the material gave off a characteristic druglike odor. The fumes caused an odd light-headed sensation followed by a slight headache and dilated pupils.

A normal, healthy white rat weighing 102 Gm. was fed 150 mg. of the powder. The animal became excited and nervous twitchings were noted, with a lack of coordination. It finally became sluggish and eventually recovered.

The cigarets also contained a coarse powder practically identical with the loose material, mixed with a diluent resembling alfalfa leaves.

The product was identified as Cannabis indica. It appeared to be practically the same as Standard laboratory samples of hemp or hashish.

Three developed, or partly developed, seeds or fruits were found in the cigarets. These seeds were planted. One of them in a little over two months grew into a tall hemp plant about 35 inches high.

Mother nature herself, on occasion, gives the chemist valuable and sometimes striking assistance.

Both venders of the cigarets entered a plea of not guilty but were found guilty by the court and subsequently confessed.

LEWIS B. ALLYN, Westfield, Mass.
Director, Westfield Testing and
Research Laboratories.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DEATHS FROM SCORPION STING

To the Editor:—How fatal is the sting of a scorpion, and does the poisonous type occur in the southwestern part of the United States? Please omit name. M.D., Oklahoma City.

ANSWER.—Scorpions occur practically all over the world and are especially common in the tropics. Many deaths, especially in children, have occurred following the sting of scorpions. The percentage of mortality diminishes rapidly as the age increases. It is rare to see a fatal case in persons over 12 years of age; however, fatal cases, in adults are reported. Dr. Mohammed Shaheen is said to have stated that 60 per cent of children under the age of 5 years stung by scorpions die. The public health department of Egypt reported 444 deaths from scorpion stings recorded in some of the larger towns from 1901 to 1907. Deaths have been reported also from South Africa, the West Indies, Mexico, Korea and Manchuria, and within the last two years there have been reported to the state board of health of Arizona six deaths from scorpion stings, nearly all of which occurred in children. The state board of health of Arizona says there seem to be two species in that state, which are locally termed the desert scorpion and the rock or mountain scorpion. The scorpion Centruroides vittatus Say is fairly common in northwestern Arkansas, where it hides under stones and similar shelters on dry hillsides. There are many species in South America, the most widespread species in south central and southeastern Brazil being Tityus bahiensis, which inhabits both prairies and hills and hides in holes in the ground or in trees. Another species in Brazil is Tityus serrulatus.

The public health department of Egypt as early as 1909 prepared an antivenin, which was the first effective antiscorpionic serum prepared. Heitor Maurano found that the Egyptian scorpionic antivenin was not effective against the venom of the Brazilian scorpion Tityus bahiensis; two years later, Vital Brazil succeeded in immunizing horses and thus obtained a serum that would neutralize Brazilian scorpionic venom. There has been maintained at Butantan for years a fresh stock of scorpion antivenin and no death from scorpion sting has been reported during that time. The toxicity of the venom of scorpions in South America was discussed in THE JOURNAL, Dec. 1, 1928, page 1733. Charles Todd in the *Journal of Hygiene* (**9**:69, 1909) discussed the preparation of an antiserum for the prophylaxis and treatment of scorpion poisoning in upper Egypt.

DERMATITIS HERPETIFORMIS

To the Editor:—Please give cause and treatment of dermatitis herpetiformis. Kindly omit name and address. M.D., Pennsylvania.

ANSWER.—The cause of dermatitis herpetiformis is unknown. There are several theories:

1. Duhring, who first showed the distinction between dermatitis herpetiformis and pemphigus, considered nervous shock or long continued nerve tension an important point in etiology, and there are many instances in which the disease has appeared after such an experience.

2. The occasional association of the disease with scleroderma and more frequently with pregnancy gives reason to suspect an endocrine origin; but the basal metabolism is, in most cases, within normal limits, and the evidence of such an etiology is not convincing.

3. There is a disturbance of metabolism in Duhring's disease. Blood sugar is sometimes low, blood chlorides and uric acid high, these conditions varying during the phases of the disorder. The chlorides and the albumin content of the skin have been found above normal, with a tendency to edema. It has been suggested that the high chloride content may be a measure of protection against the iodine sensitiveness so marked in some cases.

4. Colitis and disease of the kidneys often complicate dermatitis herpetiformis. Indicanuria is often present.

5. The infectious theory has considerable support. Wounds, abscesses, pneumonia and vaccination are often followed by Duhring's disease. Focal infection, with frequent showers of bacteria, is held by some as the cause. Leredde, one of the early investigators of the disease, thought that the eosinophilia so often found in the disease indicated the presence of intestinal parasites; but later research has not supported this view.

6. Hypersensitiveness is urged as the underlying cause. There is in many cases a marked sensitization to iodine, so that a 5% per cent ointment was suggested as a skin test for dermatitis herpetiformis. The iodine sensitiveness is not always present, however. The internal administration of the drug is more efficient in showing it. Bromides, also, sometimes cause an exacerbation, though they may be used with benefit in other cases. Skin reactions to bacterial vaccines have also been reported.

Critical judgment of the effect of treatment is necessary to evaluate any method in a disease which so rapidly fluctuates as does this one. Hygienic measures to maintain good resistance and nervous stability are most important. Avoidance of excitement, overwork and irregular hours should be insisted on. Regular hours, plenty of sleep, some outdoor exercise, a high vitamin diet with little coffee and tea, and no alcohol are important. Tobacco also should be reduced to the minimum. During an attack, rest in bed is advisable.

Tonics may be necessary. Cannabis may be used at times to reduce nervousness. Bromides are sometimes useful; but some patients are sensitive to bromides as well as to iodides. Reactions to these drugs are preventable by administration of sodium chloride.

Arsenic, either the inorganic or organic preparations, clears up the lesions and stops the itching for a time in most of the cases. Care in prescribing is of the utmost importance, for many patients who find it helpful continue to use it for years and later suffer from pigmentations, keratoses or even epithelioma in very malignant form. "Do not repeat," should be written on every prescription. Thyroid extract, even in cases presenting normal basal metabolism, is sometimes helpful, as are calcium with parathyroid extract or salicin in 1 Gm. doses three times a day. Injections of from 3 to 15 cc. of the patient's blood intramuscularly every fifth day for from five to ten doses gives relief in a fair proportion of cases. Simple bleeding has also given relief.

Focal infection should be sought and cleared up if possible. Vaccines are often of use. Obtaining cultures of the intestinal flora, testing the skin for sensitization with each organism, and making a mixed vaccine of all those causing a reaction provides a means of relief in many cases.

General exposures to ultraviolet rays have a tonic effect, and local erythema doses help to clear up the lesions and stop the itching.

Sulphur locally has long been used with good results to give temporary alleviation. One per cent solution of acriflavine hydrochloride in water can be painted on the lesions daily with benefit. The patient should be told at the outset that persistence is the only method of cure.

SECONDARY SYPHILIS WITH POSSIBLE SENSITIVITY TO ANTISYPHILITIC DRUGS

To the Editor:—Dec. 24, 1932, I began treating a case of early secondary syphilis in a man, aged 52. His rash was definite but the mucous membranes were apparently not noticeably involved. The heart and kidneys were in good condition, the man having never been seriously ill during his life. From the date mentioned until Feb. 21, 1933, he received ten doses of neoarsphenamine, from 0.15 to 0.75 Gm.; the interval between doses was three days for the first three and then approximately seven days thereafter; his weight at the beginning was 184 pounds (83.5 Kg.). After the fifth dose, 0.75 Gm., he had an attack of urticaria lasting a few days, but there was no recurrence of the urticaria thereafter. During the seventh dose, 0.75 Gm., his conjunctivae flushed and he coughed a little and was nauseated; but these symptoms passed away in a few moments after he smelled aromatic spirit of ammonia. At the conclusion of this series of neoarsphenamine his general condition was excellent. He had no complaints, the viscera showed no evidence of damage on ordinary methods of examination, and his weight had increased to 193 pounds (87.5 Kg.). He stated that once or twice recently he had felt that he was catching a cold by a sensation of stuffiness in the nose but that in a short time the sensation disappeared. I was not able to tell accurately from the story whether or not it followed soon after the neoarsphenamine injections. A week after the last injection I started him on sodium bismuth thioglycollate, 0.2 Gm. After the third dose he complained of a cold in the head associated with such severe swelling of the nasal mucous membranes as to make breathing possible through the mouth only. This developed between March 8 and 11. Another dose was given, March 11, and when he presented himself for another dose, March 16, he complained of an increase of the nasal swelling and a pharyngitis. Also there was a generalized muscle soreness, with aches and pains in the larger joints. There was no fever and no headache or purulent nasal discharge. By March 25 the general soreness and pain in the joints was severe; the man could get no rest but refused opiates because they produced nausea. The nasal mucous membrane was edematous and apparently unaffected by ephedrine. The knees and elbows were involved mostly. Pain in these joints was associated with movement; there was a thickening of the tissues over and around the olecranon processes and periosteal tenderness in the same regions; the knees showed no swelling; there were occasional shooting pains in the back of the thighs, radiating to the knees and sometimes below. The patient was put in bed; morphine was given hypodermically, and acetylsalicylic acid by mouth, for pain. There was no fever. Swelling of nasal membranes was unaffected by ephedrine or mild silver protein. By March 25 the right knee was swollen, apparently from both an increase in joint fluid and periarticular edema; but no redness or increase in local temperature was noted. The radiating pains in the back of the legs continued and sometimes went below the knee. There were some tender spots on the tibias just above the ankles, but no redness developed. The nasal condition was as before. April 1, 0.1 Gm. of sodium bismuth thioglycollate was given and in about four hours the pains in the joints and along the sciatic nerve trunks were increased and a dose of morphine was necessary. In about thirty-six hours the patient was much improved as to the joint and other pains but the nasal condition was not improved. April 10, another 0.1 Gm. dose of the drug was given, with similar after-effect. Saturated solution of potassium iodide was given, but when a rash developed after the dosage of 20 minims (1.25 cc.) three times a day had been reached, it was stopped. The patient refuses consultation with a nose and throat specialist because he fears that an operation will be suggested. No roentgenograms of the sinuses have been made. No Wassermann test has been made since the original, in the latter part of December, 1932, which was positive. The heart and kidneys show no signs of involvement. Please discuss the etiologic factors involved in this jig-saw. What must I do now in regard to treatment of syphilis and neuro-articular disease? Is the man sensitive to metals or is the condition one of focal infection grafted on the syphilis? Today I gave him 0.5 Gm. of sodium thiosulphate. Is more indicated? If he is sensitive to metals, how can the syphilis be treated? What can be done about the nasal condition? If published, please omit name, address, and state.

M.D.

ANSWER.—The history as given is so complicated that no definite diagnosis can be reached. So far as sensitiveness to the arsphenamine drugs is concerned, during the ten injections of neoarsphenamine the patient had two reactions (after the fifth and seventh doses) of the angioneurotic type, first urticaria and next a mild nitritoid crisis. These reactions are not indicative of sensitization to neoarsphenamine and provide no contraindication to the further use of this drug.

Bismuth compounds may, in rare instances, cause a reaction popularly known as bismuth grip, characterized by general malaise and generalized aching, particularly located in the joints. It is, however, rarely as severe as in this patient and is not associated with periarticular swelling or the exudation of fluid into the joints.

Either neoarsphenamine or bismuth compounds may cause peripheral neuritis, although the correspondent fails to provide information as to muscle strength or sensory changes that usually accompany this condition. The suggestion seems unlikely because of the conditions found in the joints.

Neither neoarsphenamine nor bismuth compounds produce reactions characterized by intense swelling of the nasal mucosa. This fact, together with the factors already mentioned, suggest that the patient's nasal and joint symptoms are not due to sensitivity to any of the drugs employed.

There are infrequent examples of so-called drug resistant syphilis in which syphilitic lesions fail to heal or recur while the patient is actually under treatment. In such patients the usual story is that healing occurs during arsphenamine and lesions recur during the interim course of heavy metal. This possibility must be considered in the present instance. Roentgenograms of the tibias should be taken to determine whether the tender spots are caused by local areas of syphilitic periostitis; and the patient's objection to a laryngologic examination should, if possible, be overcome. Failing these examinations, some idea as to whether the possibility of drug resistant syphilis is correct may be gained by a therapeutic test with an arsphenamine. This should be carried out, preferably with a different one of the arsphenamine group than that originally used, since, if the patient is actually drug resistant, the phenomenon of resistance is often drug specific. It is suggested that the patient be given 0.2 Gm. of arsphenamine, to be followed in five days with a dose of 0.4 Gm. if no reaction occurs. Prompt subsidence of symptoms would strengthen the suggestion of drug resistant syphilis.

This condition is, however, so relatively rare that it seems much more likely that the patient has an intercurrent disease probably an acute infectious arthritis associated with a focal infection in the nasopharynx.

The information provided does not permit a definite answer to the question as to whether the patient is sensitive to metals. This can be determined only by a further trial of antisyphilitic treatment. It is suggested that this be carried out, beginning now with a course of arsphenamine and, if this is tolerated without reaction suggesting arsphenamine sensitivity, to follow this with a course of an insoluble bismuth salt, preferably bismuth salicylate. There is no indication for giving the patient any more sodium thiosulphate, which, in the opinion of some, is of no value whatever in heavy metal poisoning.

An answer as to how the syphilis can be treated if the patient is sensitive to metals cannot be provided without further information from the correspondent.

To offer suggestions as to the treatment of the nasal condition is valueless without more information as to its etiology, which should be obtained, if possible, by thorough laryngologic examination.

SYPHILIS OF THE NERVOUS SYSTEM

To the Editor:—A man, aged 35, had a chancre fifteen years ago. This was treated intensively, so that no positive Wassermann reaction ever appeared. The spinal fluid was always Wassermann negative, the last test being made about two years ago. Recently courses of trypars-amide and a bismuth compound were instituted, six of each, this being the only treatment within the last five years. The patient has had for about a year a sense of fulness in the ears as if water were present. The ears have been catheterized without result. Occasionally there is a sharp pain in the mastoid region on both sides. This is not so marked early in the morning. Besides, he is always tired even in the morning, but at about 5 p. m. he feels better. This is a troublesome feature in his work and worries him. Dizziness is present. No Romberg sign is present but he feels as if he will fall over if he closes his eyes. Neurologic examination shows a fixed right pupil and the knee jerks slightly sluggish but is otherwise negative. Abdominal symptoms are present. An emptiness appears in the epigastric area about two hours after eating. Occasionally there is nausea with belching. The bowels are normal. Three years ago he was diagnosed as having a nervous colitis. Could you suggest any diagnosis for these nervous symptoms? Is there any possibility of syphilis being a cause for the head condition? Please omit name.

M.D., Illinois.

ANSWER.—There certainly is a possibility that syphilis may be the cause of the nervous symptoms in this case. Negative laboratory tests never exclude syphilis of the nervous system. The clinical evidence would be almost conclusive if it could be shown that there is no other explanation for the fixed right pupil and particularly if only the light reaction was lost before the pupil became fixed. It is, of course, a fact that while the Argyll Robertson pupil is nearly always due to syphilis, many other disease conditions may produce a fixed pupil.

CATHARTIC COLITIS

To the Editor:—A woman, aged 62, complains that she has had intermittent pain in the upper left quadrant of the abdomen for the past three years. Constipation, which can be relieved only by large doses of a cathartic, has been continuous. She is 5 feet 5 inches (165 cm.) tall and weighs 185 pounds (84 Kg.). She is extremely nervous. The right lobe of the thyroid is palpable and hard but not nodular; the left lobe is enlarged, firm and regular. The heart and chest are normal. There is no visceral enlargement nor tumor masses, pain and tenderness on palpation over the upper left quadrant. The Wassermann reaction is negative. A basal metabolism test was refused. Roentgen examination of the gastro-intestinal tract is negative. The stomach emptied in the prescribed time. The contour of the colon is regular; the meal was in the colon in twenty-four hours and was regularly distributed. Roentgen examination of the thorax is negative and there is no roentgen evidence of arthritis. The patient was placed on compound solution of iodine, 10 minims (0.6 cc.) three times a day; phenobarbital, three-fourths grain (0.05 Gm.) three times a day; magnesia magma, 1 fluidounce (30 cc.) three times daily, and a reducing diet. The compound solution of iodine over a period of six weeks has been reduced to 3 minims (0.2 cc.) daily and phenobarbital, three-fourths grain, at bedtime. The weight has been reduced to 153 pounds (69 Kg.), both lobes of the thyroid have been considerably reduced and the nervousness has abated. However, the pain and constipation still persist. Can you offer any suggestions as to diagnosis and treatment? Please omit name.

M.D., Wisconsin.

ANSWER.—The history fits well with the condition resulting commonly from ineffectual or poor attempts at relieving constipation by the repeated use of cathartics. The rôle of the thyroid is questionable. Ordinarily hyperthyroidism is associated with frequent bowel movements rather than constipation, although the opposite is occasionally seen. If the physical appearances and the results of the roentgen and stool examinations are all negative, the diagnosis of cathartic colitis becomes all the more justified. The attempts of treatment with 30 cc. of magnesia magma three times daily will no more cure the patient than the methods used by the patient herself before medical aid was sought. In a woman of 62 it is sometimes difficult to promise that relief will be obtained without the use of some form of cathartic. The following routine may be instituted: All cathartics should be withdrawn. The diet for several days, at least until the pain is gone, should be bland; i. e., devoid of any roughage, either raw or boiled. If possible, rest in bed for a short time daily is advisable, during which time hot applications are applied over the whole of the abdomen. Some form of belladonna, as atropine sulphate, 0.3 mg. (1/200 grain), may be given twice daily, or as the extract in 0.013 Gm. (1/5 grain) doses alone or preferably in conjunction with calcium gluconate, from 1.6 to 2 Gm. (25 to 30 grains), three times daily. If no bowel movement occurs, a retention olive or cottonseed oil enema should be administered every other day, to be followed if necessary with an enema of one glass of warm water in the morning. As the subjective symptoms disappear, stewed vegetables should be gradually added to the diet, then stewed fruit and finally the uncooked ones. It is sometimes necessary to resort to some form of mild cathartics to promote evacuations daily or every other day. Liquid petrolatum may be taken in doses of a tablespoonful once or twice daily. It may be given in the form of a thick emulsion as it may be obtained in the market but should not be prescribed with phenolphthalein because the latter will provoke the pain which the physician is seeking to eliminate. This is the type of case for which colonic irrigations are prescribed by some, but the procedure is unjustifiable here.

NO INSULIN INACTIVATION

To the Editor:—I should like to obtain a supply of inactivated insulin. Is it possible to obtain such a product? Is there a simple method by which insulin may be inactivated with a minimum disturbance of the insulin molecule?

SAMUEL DESSEN, M.D., Chicago.

ANSWER.—While the literature contains many references on inactivation of insulin by various enzymes, cysteine, glutathione, and so on, THE JOURNAL has no information as to the usefulness of such products and no record of such a preparation on the market. Since the structure of the insulin molecule remains to be fully elucidated, the changes affected in it by "inactivation" are not easily detectable, short of radical changes in the chemical nature of the substance. Consequently no "simple method of inactivation with a minimum disturbance of the insulin molecule" can be recommended.

STAPHYLOCOCCI AND ERYSIPELAS

To the Editor:—Recently I had a case of facial erysipelas that terminated fatally on the fifth day. The white blood average cell count was 40,000. Blood culture showed a hemolytic staphylococcus. Please give me some idea as to the virulence of the organism. The patient died with every evidence of a severe septicemia. Please omit name.

M.D., Illinois.

ANSWER.—Certain strains of the hemolytic variety of Staphylococcus aureus, isolated from human sources of fatal septicemia, secrete in young broth cultures powerful dermotoxins and hemotoxins. Adult rabbits injected subcutaneously with from 0.1 to 0.2 cc. of the dermotoxin suffer intense local necrosis, with subsequent sloughing of the overlying skin. The intravenous injection of from 0.2 to 0.4 cc. of the hemotoxin causes total necrosis of the renal cortex, which, histopathologically, resembles the picture occasionally observed in eclamptic cortical necrosis. Both the subcutaneous and the intravenous injection of these toxins produce general symptoms of extreme intoxication, and death usually results in from two to four days. Professor Forssman has recently called attention to this excessive toxic action of certain virulent strains of Staphylococcus aureus (*Acta path. et microbiol. Scandinav.*, supp. 11, p. 202, 1932).

It is most improbable that true erysipelas is caused by the staphylococcus. Rare cases of erysipelas have been reported from which the staphylococcus was the sole micro-organism isolated. Birkhaug has discussed these cases at length (The Etiology of Erysipelas, *Arch. Path.* **6**:441 [Sept.] 1928). Modern clinical bacteriologists are inclined to view such isolated organisms as contaminants. In this connection one must consider the ubiquitous presence of the staphylococcus and its ready transfer to the erysipelatous area. After careful disinfection of the area from which cultures are to be taken and with the use of Birkhaug's intracutaneous aspiration technic at the edge of the inflamed area, the lesion will invariably yield a pure culture of the hemolytic streptococcus, the true cause of erysipelas. When staphylococcic septicemia arises in connection with erysipelas, as in the case reported, the former must be considered a secondary infection. The path followed by the staphylococcus is either the lymphatics or the blood vessels within the erysipelatous abraded area. Staphylococcus septicemia superimposed on erysipelas offers a grave prognosis.

RADIUM TREATMENT OF UTERINE FIBROIDS

To the Editor:—What is the present status of radium treatment in uterine fibroids? How extensively and successfully is it practiced, and for what type of cases? An evaluation of the treatment would be appreciated. Please omit name.

M.D., California.

ANSWER.—Radium is definitely valuable in the control of uterine fibroids. Its usefulness is directly proportional to the care exhibited in the selection of the patients in whom it is to be used. At present there is general agreement that radium treatment is suitable for any woman over 40 who has a symmetrically placed fibroid not larger than the size of a fist. It is contraindicated if there are multiple tumors, if they are eccentrically placed, or if they are larger than the size of a fist, as experience has shown that in such patients neither the

symptoms nor the growths themselves are completely inhibited. It is contraindicated in the presence of adhesions, for these frequently supply the fibroid with a collateral source of nutrition which maintains its growth. The presence of adnexal disease or any active inflammatory process in the pelvis is a barrier to its use lest the devitalization produced by the radium should result in a spread of the infection. In younger women remote from the menopause or in whom fertility should be preserved, radium is contraindicated. The fibroid may meet the prescribed limitations, but the treatment, to be effective, will necessarily destroy follicle formation in the ovaries and precipitate the menopause. For these patients, myomectomy or subtotal hysterectomy is preferable.

The dosage ranges from 1,200 to 1,800 milligram hours, varying with the size of the tumor, the severity of the bleeding, and the age of the patient in relation to the menopause. Introduction of the radium capsule should always be preceded by a diagnostic curettage. The capsule container should be just long enough to lie entirely within the uterine cavity and cervical canal. Care must be taken to prevent the extrusion of the capsule. This is done by a light pack of the cervical canal, by a temporary stitch through both lips of the cervix, or by a long handled applicator the outer end of which is secured to the patient's thigh. Packing should be placed in the vagina to keep the bladder and rectum protected as usual but need not be so extreme as to cause discomfort or urinary retention. Radium is adequate for the control of the growth and the symptoms in 95 per cent of suitably selected patients. The effects are noticeable in from four to six weeks and reach a maximum in three months. There is cessation of bleeding, termination of menstruation, and a gradual shrinkage of the tumor. The failures require a repetition of the treatment not sooner than after six months.

In the United States, 287 hospitals and clinics report having radium. Of these, 128 have 75 mg. or more. Four hundred and fourteen physicians report having radium, of whom 171 have 75 mg. or more. Of nine laboratories with radium, five have 75 mg. or more. There are approximately 304 institutions and individuals each controlling 75 mg. or more (and triple that number have less than 75 mg.) of radium. Fifty milligrams is sufficient for the treatment of fibroids.

POISONING BY ILLUMINATING GAS FROM OIL DISTILLATE

To the Editor:—I should like to have you send me some information regarding poisoning from illuminating gas made from oil distillate. I am particularly interested in knowing the concentration necessary to produce ill effect on man and what changes and effect this has on the human body. Soon I must appear as a witness in court where a person is claiming serious and permanent consequences from the inhalation of this gas. She was sleeping in a room about fifty feet distant from a very small leak in a gas pipe, which was in the open. I should like an opinion as to whether she could possibly have inhaled enough of this gas to injure her. Please omit name and address. M.D.

ANSWER.—The third edition of "Combustion," a reference book published by the American Gas Association, New York, 1932, in table 53, states that the oil gas made on the Pacific Coast contains 12.7 per cent of carbon monoxide. This amount of carbon monoxide is somewhat higher than that in coal gas, which ranges from 6 to 11 per cent, or reformed natural gas containing from 9 to 10 per cent. Carbureted water gas contains from 30 to 40 per cent of carbon monoxide. Under the circumstances stated there would be no possibility of injury from a gas leak into the open at the distance stated.

TREATMENT OF SQUINT

To the Editor:—I have under treatment a boy, aged 5 years, with an alternating, intermittent, noncomitant, convergent squint of about 20 degrees in the right eye and 10 in the left. The central vision of the right eye is 6/7; of the left eye, 6/15. This has been present for the past two years and the child has not worn glasses. Retinoscopy after atropine cycloplegia shows a hyperopia of only one-half diopter. I am rather puzzled about this case because, as a general rule, cases of squint of this type usually show a total hyperopia of 2 diopters or more, and I am wondering whether the wearing of such a small correction will be of any benefit. I am of the opinion that the covering of the good eye is of doubtful value in alternating squint of this type and will welcome any suggestions for further treatment. Kindly omit name.

M.D., North Dakota.

ANSWER.—It is extremely improbable that nonsurgical treatment will be of any great value in this case. In the majority of cases of alternating squint there is apt to be a greater hyperopia present than in this case, but the correction of the hyperopia alone will not cure the squint. The development of fusion is the deciding factor and in alternating squint that faculty is particularly dormant. As it is increasingly difficult to develop fusion after the age of 6 years, it is advisable to bring about mechanical parallelism of the eyes as early as possible and follow the operative procedure with intensive orthoptic training. This should be done as soon as possible in the case here cited.

PHENANTHRENE

To the Editor:—In the Washington paper the *Pathfinder* I found a note to the effect that Drs. Lyndon F. Small and Nathan B. Eddy have found a non-habit-forming morphine called phenanthrene. Please advise me whether this is true. Can I get literature on the subject, and from whom? Can this drug be exported? M.D., Guatemala.

ANSWER.—Dr. Lyndon F. Small of the University of Virginia and Dr. Nathan B. Eddy of the University of Michigan are engaged under the auspices of the Drug Addiction Committee of the National Research Council in a systematic chemical and pharmacologic study of morphine and its derivatives and of substances synthesized from phenanthrene. It is hoped that this study will further search for a non-habit-forming morphine, but such a substance has not been found as yet. Two papers by Dr. Eddy on the pharmacologic side of this investigation have appeared (*J. Pharmacol. & Exper. Therap.* **45**:339, 361 [July] 1932) and a third is in process of publication.

Phenanthrene is a comparatively simple substance which is obtained from anthracene oil. Methods for its purification have been described (Cohen and Cormier: *J. Am. Chem. Soc.* **52**:4364 1930) and a description of its action in the body will be published by Dr. Eddy in the *Journal of Pharmacology and Experimental Therapeutics*. A partially hydrogenated phenanthrene forms the skeleton, to which are attached the active groups of the morphine molecule. Phenanthrene itself, however, is a but poorly soluble substance of very low toxicity and produces only a mild degree of depression in the animal body much like that following a small dose of a barbiturate. Aside from its very weak depressant action, the effects of phenanthrene in no way resemble those of morphine.

FISH FROM CONTAMINATED WATERS

To the Editor:—Please advise whether fish taken from waters heavily contaminated with sewage are considered safe for food purposes. Would there be the possibility of an intestinal infection with the colon-typhoid group of organisms in persons who have eaten undercooked fish from such waters? The stream considered receives approximately three fourths of the untreated sewage from a city of 20,000 population. Please omit name. M.D., Arkansas.

ANSWER.—Fish taken from polluted waters have not been commonly implicated in the causation of typhoid. This is probably chiefly because the intestinal contents of fish are generally removed in preparing fish for the table, and the fish are usually cooked at temperatures that destroy typhoid and related bacilli. Food animals taken from sewage-contaminated water and eaten raw, such as oysters, clams and mussels, are well known to be occasional sources of typhoid. London health authorities have traced some cases of typhoid to the use of fried small ungutted plaice. Under some conditions, therefore, imperfectly cooked fish from highly contaminated water may be dangerous.

TREATMENT OF MIGRAINE BY NONSPECIFIC DESENSITIZATION

To the Editor:—Cecil, in his "Textbook of Medicine," mentions a method proposed by Miller and Raulston (THE JOURNAL, June 30, 1923, p. 1894) for the treatment of migraine by the intravenous administration of 5 per cent peptone. What is the present status of this treatment? Is the peptone generally available and where? Have endocrine studies resulted in the discovery of any method of treatment more promising of results?

EDWARD F. MALLOY, M.D., Stamford, Conn.

ANSWER.—The writers cited have used and still use some intravenous peptone in the treatment of migraine. This is used on the basis of a nonspecific desensitization. About 20 per cent of these patients are entirely freed from their symptoms and remain desensitized for from six to eight weeks, when brief further treatment is necessary. There was a review of the whole subject of migraine by Dr. Peter Bassoe in THE JOURNAL, August 18.

PRIMARY LATERAL SCLEROSIS OR PYRAMIDAL TRACT DEGENERATION

To the Editor:—Please discuss the treatment of primary lateral sclerosis. Please omit name. M.D., Oregon.

ANSWER.—The term lateral sclerosis is used to designate bilateral degeneration of the pyramidal tracts from any cause, and consequently it denotes a syndrome and not a disease. The commonest causes of such degeneration are syphilis (Erb's

syphilitic spastic paraplegia), multiple sclerosis, and amyotrophic lateral sclerosis. In the latter disease there is also atrophy of the anterior horn cells. The term is also used for an exceedingly rare disease, primary lateral sclerosis, in which there is no lesion except pyramidal tract degeneration. This disease is so rare that even few experienced neurologists have ever seen a case.

EFFECTS OF CIGARETS CONTAINING MENTHOL

To the Editor:—Will there be any injury to the respiratory organs from the constant use of menthol, such as found in mentholated cigarets, if a person uses one package daily? Please omit name.

M.D., New York.

ANSWER.—We do not know the results of any research work on the effect of smoking mentholated cigarets. It is probable, however, that smoking this type of cigaret would not cause any injury to the respiratory organs. Work has been done with reference to the effect of menthol applied over long periods on the nasal mucous membrane of rabbits. It is doubtful whether the inhalation of cigaret smoke with a very slight amount of menthol in it would have any deleterious effects on the bronchial mucous membrane.

REMOVAL OF OVARY AND EFFECTS ON THE MENOPAUSE

To the Editor:—I am frequently asked if the removal of one ovary hastens the advent of the menopause any, and the literature seems to be silent on this question. Please omit name.

M.D., Texas.

ANSWER.—With the removal of one ovary, provided the remaining ovary is normal and the uterus is left in place, there should be no hastening of the menopause or of the menopausal molimina. If the uterus is removed with the one ovary there is a tendency at the present time to believe that the remaining ovary undergoes atrophy in a period of a few years because of the lack of uterus and endometrium for the ovary to act on.

CALCIUM LACTATE IN MIGRAINE

To the Editor:—I am told that calcium lactate is valuable in the treatment of migraine. If this is the case, can you advise me as to reasons, doses, and so on?

D. F. RUSSELL, M.D., Van Wert, Ohio.

ANSWER.—Calcium lactate, in doses of from 1 to 2 Gm. every hour or two for short periods, sometimes gives relief, which has been variously attributed to diminished permeability of the cells, thus lessening transudation, to improvement in autonomic nerve function, and to relief of spasm of unstriped muscle.

"HYPERESTHETIC OR VASOMOTOR RHINITIS"

To the Editor:—In THE JOURNAL, August 12, your reply on this subject deserves some comment. Your consultant states that "the fact that the patient sneezes shortly after arising indicates that probably house dust is the offending factor to which the patient is sensitive. House dust as a rule settles during the night when the air of a room is still, but after the patient rises and walks about, the air is stirred and the dust rises, is inhaled and causes sneezing."

While this explanation for morning sneezing is ingenious, it is not in keeping with clinical observation. In the first place, the morning sneezing occurs not only in dust-sensitive patients but in the majority of instances of hyperesthetic rhinitis. This will also occur in a room made dust free and in which the air is filtered. Furthermore, it applies to food-sensitive patients as well as to those who are irritated by inhalants. Frequently the mere raising of the head from the pillow will induce an attack.

These morning spasms are often relieved by a clearing of the nose of its secretions and by the ingestion of foods or liquid. Although I make no claim for an absolute explanation of the phenomenon of morning sneezing in hyperesthetic rhinitis, clinical observations favor the following as possible causes: increased nervous irritabilty due to waking from sleep, physiologic and vascular changes in the nose due to change in position, metabolic changes during the night which may reach their maximum in the morning, and exposure to temperature changes on arising from bed.

S. M. FEINBERG, M.D., Chicago.

MILK AND MOLASSES ENEMA

To the Editor:—In THE JOURNAL, August 19, is an inquiry as to the origin of the milk and molasses enema. About forty years ago, when Dr. Nicholas Senn was making a trip round the world studying the various medical procedures of all nations, he came back from India with the efficacy of the milk and molasses enema. A short while afterward when the late Dr. Ap Morgan Vance of this city ordered a milk and molasses enema for a patient of mine in St. Joseph Infirmary, there happened to be present a returned medical missionary from India, and she said: Dr. Vance, where did you get that idea? I didn't think it was ever used anywhere except in India." Whether or not that was a remedy in India since the time of Hippocrates, I cannot say.

W. F. BOGGESS, M.D., Louisville, Ky.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Boston, Chicago, Cleveland, New York, Philadelphia, St. Louis and San Francisco, Oct. 28. *Oral.* New York, Dec. 15-16. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written (Group B Candidates).* The examinations will be held in various cities of the United States and Canada, Dec. 9. Application necessary before Nov. 1. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

ARIZONA: Phoenix, Oct. 3-4. Sec., Dr. J. H. Patterson, 320 Security Bldg., Phoenix.

CALIFORNIA: *Regular.* Sacramento, Oct. 16-19. *Reciprocity.* Sacramento, Oct. 16. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, Oct. 3. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Basic Science.* New Haven, Oct. 14. *Prerequisite to license examination.* Address State Board of Healing Arts, 1895 Yale Station, New Haven.

GEORGIA: Atlanta, Oct. 10. Joint Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

IDAHO: Boise, Oct. 3. Dir., Mr. F. L. Cruikshank, Boise.

ILLINOIS: Chicago, Oct. 17-19. Supt. of Regis., Mr. Eugene R. Schwartz, Springfield.

MICHIGAN: Lansing, Oct. 10-12. Sec., Dr. J. E. McIntyre, 202-3-4 Hollister Bldg., Lansing.

MINNESOTA: *Basic Science.* Minneapolis, Oct. 3-4. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. *Regular.* Minneapolis, Oct. 17-19. Sec., Dr. E. J. Engberg, 350 St. Peter St., St. Paul.

MISSOURI: Kansas City, Oct. 17-19. State Health Commissioner, Dr. E. T. McGaugh, State Capitol Bldg., Jefferson City.

MONTANA: Helena, Oct. 3. Sec., Dr. S. A. Cooney, 7 W. 6th Ave., Helena.

NEBRASKA: *Basic Science.* Lincoln, Oct. 3-4. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW JERSEY: Trenton, Oct. 17-18. Sec., Dr. James J. McGuire, 28 W. State St., Trenton.

NEW MEXICO: Santa Fe, Oct. 9-10. Sec., Dr. P. G. Cornish, Jr., 221 W. Central Ave., Albuquerque.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 25-28. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

RHODE ISLAND: Providence, Oct. 5-6. Dir., Dr. Lester A. Round, 319 State Office Bldg., Providence.

TENNESSEE: Memphis, Sept. 29-30. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis.

WISCONSIN: *Basic Science.* Madison, Sept. 23. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

Nebraska June Examination

Mrs. Clark Perkins, director, Bureau of Examining Boards, reports the written examination held at Omaha, June 7-8, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Fifty-seven candidates were examined, all of whom passed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
University of Arkansas School of Medicine	(1932)	80.9
Creighton University School of Medicine	(1932)	83.7,
(1933) 79.2, 80.2, 82.3, 83.2, 84.2, 84.5, 85.8, 86, 86.9, 88.3, 88.8.		
University of Nebraska College of Medicine	(1931)	80,
80.1, (1932) 81.3, 81.5, 82.2, 82.9, 83.3, 84.2, 84.3, 84.3, 86, (1933) 79.6, 79.6, 79.9, 79.9, 80.6, 80.8, 80.9, 81, 81.6, 81.7, 81.9, 82.1, 82.6 82.7, 82.9, 83.4, 83.4, 84.3, 84.5, 84.6, 84.9, 85.1, 85.3, 85.3, 85.4, 85.6, 85.9, 86.4, 86.4, 86.5, 86.5, 88.1		

Two physicians were licensed by reciprocity, March 29 and April 17, respectively. The following college was represented:

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
University of Arkansas School of Medicine	(1908), (1930)	Arkansas

North Dakota July Examination

Dr. G. M. Williamson, secretary, North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held in Grand Forks, July 4-7, 1933. The examination covered 13 subjects and included 90 questions. An average of 75 per cent was required to pass. Twelve candidates were examined, 11 of whom passed and 1 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Rush Medical College	(1933)	81.5
Northwestern University Medical School	(1932)	78
University of Louisville School of Medicine	(1932)	80
University of Minnesota Medical School	(1915)	77.5,
(1931) 75, (1933) 82.5		

College		Year Grad.	Per Cent
Creighton University School of Medicine		(1932)	82
Temple University School of Medicine		(1932)	80
Baylor University College of Medicine		(1932)	79
University of Manitoba Faculty of Medicine		(1933)	81
University of Toronto Faculty of Medicine		(1921)	80
	FAILED		
College		Year Grad.	Per Cent
University of Minnesota Medical School		(1932)	72

Arizona July Examination

Dr. J. H. Patterson, secretary, Arizona State Board of Medical Examiners, reports the written examination held in Phoenix, July 5-6, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Three candidates were examined, 1 of whom passed and 2 failed. Four physicians were licensed by reciprocity with other states, July 27. The following colleges were represented:

College		Year Grad.	Per Cent
	PASSED		
University of Michigan Medical School		(1930)	86
College		Year Grad.	Per Cent
	FAILED		
University of Kansas School of Medicine		(1931)	72
Osteopath			68
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine		(1928)	Iowa
Kentucky School of Medicine		(1893)	Missouri
University of Louisville Medical Department		(1913)	Kentucky
Kansas City Medical College, Missouri		(1896)	R. Island

Book Notices

Medicolegal Cases: Abstracts of Court Decisions of Medicolegal Interest, 1926-1930. Edited by Wm. C. Woodward, M.D., LL.M., Director, Bureau of Legal Medicine and Legislation, American Medical Association. Reprinted from "The Journal of the American Medical Association," 1926-1930, inclusive. Cloth. Price, $7. Pp. 1336. Chicago: American Medical Association, 1932.

What the courts have decided concerning a particular disease or injury, and how they have arrived at their decisions, are matters of prime importance to every one who must know what the law is concerning that disease or injury or similar diseases and injuries. The decisions of trial courts and of many of the intermediate appellate courts are not published or are published only locally. They are therefore not generally accessible. The decisions of some of the more important intermediate appellate courts and of all appellate courts of last resort are published, filling about 300 volumes annually, and every one has access to them. Through indexes and digests of those reports, any one can learn what the courts have decided; but even to one familiar with methods of legal research the task is more or less difficult, and to one not familiar with such methods it is practically impossible. If the problem under investigation relates to diseases and injuries, the difficulty is increased by reason of the fact that neither indexes nor digests to law reports are arranged with particular reference to medical and surgical matters.

The American Medical Association has published weekly in THE JOURNAL, for many years, abstracts of court decisions of medicolegal interest, for the information and guidance of physicians and others interested. Because of many inquiries concerning the publication of these abstracts in book form, the Association has now published in a single volume some of the more recent abstracts, with the expectation of publishing similar volumes at stated intervals if the demand for the first volume is sufficient. Such is the history of the book here under review. It is obviously a book of reference, not a book for casual or even systematic reading or for class room purposes. The abstracts it contains, covering some thirteen hundred court decisions in all, were published in THE JOURNAL during the five-year period 1926-1930, inclusive. They cover, it is stated, probably all decisions of substantial medicolegal interest published in the law reports during the five years ended, approximately, April, 1930. While the abstracts in the earlier part of the volume have a more or less legalistic tone, they are readily understandable by any intelligent reader. In the later abstracts there is apparent a greater effort to coordinate the medical and the legal facts underlying the decisions, so as to enable physician, lawyer, claim agent, insurance adjuster or other investigator to determine conveniently whether any given decision is pertinent to the case that he at the moment has under consideration, before he resorts to the published decision itself for further information. The publication of these abstracts in the chronological order in which they appeared in the weekly issues of THE JOURNAL, and not according to a topical arrangement, has made necessary an exceptionally exhaustive index. The index is in fact the heart of the volume. Entries are based on both medical and legal terminology, for the convenience of physicians, lawyers and laymen. A table of cases is included in the book.

This volume will, it is believed, serve a useful purpose for physicians, lawyers, claim agents and insurance adjusters. It should be of service to workmen's compensation boards, medical examining and licensing boards, and state and local boards of health, and to the officers and employees who carry on the activities of such agencies. The book seems, therefore, to be an essential part of every medical library. Because it facilitates research into the medical and surgical aspects of legal problems, it should prove useful in law libraries also.

Sécrétion interne et régénérescence: Essais expérimentaux cliniques et chimico-biologiques sur les phénomènes de régénérescence dans des conditions physiologiques (sénilité) et pathologiques. Therapia protoformativa multispecifica. Par le Dr. N. E. Ischlondsky. Paper. Price, 90 francs. Pp. 336, with 72 illustrations. Paris: G. Doin & Cie, 1933.

The author justly condemns the misleading term "rejuvenation." He points out that the conceptions of Brown-Séquard, Voronoff, Steinach, Cavazzi and Doppler are based on neither scientific substrata nor sound clinical observation. He spent twelve years in studying the chemophysiology of the internal secretions of the embryo and asserts that he has isolated substances which, when injected into aging individuals, result in a definite regeneration of the affected tissues. This form of therapy Ischlondsky designates as "incretion treatment" or as "therapia protoformativa multispecifica." More than 400 cases were observed. Ischlondsky divides these into (*a*) senile persons and (*b*) young individuals suffering from disease. He condemns "substitution therapy" by hormones as practiced today. It should be replaced, he insists, by his "only true, sensible method." A careful perusal of the work fails to disclose the method of obtaining the "incretory substances" referred to, except that they are obtained from embryos in the third or fourth month. On page 240 a few lines are given on the technic of injection, which is nothing more than a description of routine hypodermic medication. On page 239 the author speaks of having abandoned the "biologic dose" and now uses a "chemical dose." He states that it may be given either "single" or "double," the former containing 0.015 Gm. of "incretory complex." This vague information rests on a flimsy substratum and is of no informative value. The reader is struck by the extraordinary results the author claims to have obtained in such major clinical entities as angina pectoris, arteriosclerosis and grave diabetes. Until full scientific data are furnished on the method of preparation and use of this substance, its heralded value to scientific medicine remains questionable.

Physician's Handbook of Community Resources in Metropolitan Boston Together with Certain Legal Responsibilities. Published Under the Auspices of the Massachusetts General Hospital. Paper. Price, 50 cents. Pp. 47. Boston, 1933.

This little pamphlet is similar in purpose and scope to the Medical Blue Book of Wisconsin, published by the State Medical Society of Wisconsin in 1929, and the Medicolegal Digest, 1931-1932, published by the Colorado State Medical Society. It should prove valuable not only to physicians practicing in Metropolitan Boston, for whose use primarily it has been prepared, but to all physicians practicing in the commonwealth of Massachusetts. The information it contains relating to registration for the practice of medicine, to reporting diseases, accidents, births and deaths, to prescribing, administering and dispensing narcotic drugs and alcoholic liquors, to possessing and using hypodermic instruments, and to industrial injuries and occupational diseases is as applicable elsewhere in the commonwealth as it is in the metropolitan area. To physicians practicing in Metropolitan Boston there is much of interest and value in the information concerning special diagnostic and

therapeutic facilities available there, the convalescent and nursing services and local resources for special social problems, and other matters. Such information not infrequently is urgently needed by physicians and social workers, and somehow it always seems most difficult to obtain at the time when the emergency is greatest.

This pamphlet was published under the auspices of the Massachusetts General Hospital, a private corporation. The initial cost of printing was borne by an anonymous donor. The pamphlet is being sold for 50 cents a copy, and the proceeds are being reserved to pay for the publishing of later editions if they are needed. The text covers thirty-six pages, there is an ample index, and blank pages are included on which to enter additional information as circumstances require. With this handbook and the handbooks published by the State Medical Society of Wisconsin and the Colorado State Medical Society as patterns, the several state medical societies throughout the country, and possibly some of the larger and more prosperous county societies, might well undertake to issue similar publications. The cost of preparing and publishing the Colorado Medicolegal Digest seems to have been defrayed in part by the proceeds of advertising, and so long as the advertising is legitimate and ethical advertising there seems to be no reason why that course should not be followed.

Chemical Laboratory Manual. By L. Jean Bogert, Ph.D., Instructor in Experimental Medicine, Yale Medical School. Prepared to accompany Bogert's "Fundamentals of Chemistry," third edition, revised. Second edition. Cloth. Price, $1.50. Pp. 142, with illustrations. Philadelphia & London: W. B. Saunders Company, 1933.

This manual provides simple experiments to correlate and illustrate the subject matter in the author's textbook of general chemistry. There are questions for each experiment which attempt to bring out the underlying principles. A general plan of study with parallel textbook and laboratory assignments is presented in tabular form. Experiments in inorganic and organic chemistry are included. The latter include the carbohydrates, fats, proteins, digestion, and a few experiments on blood and urine. The book is too brief for the medical student who devotes considerable time to the important subject of chemistry. For general courses given to nonmedical students, for domestic science students and for nurses, the manual will be useful. Teachers of such courses will find in this book valuable suggestions for the outlining of a general course in chemistry.

Urine and Urinalysis. By Louis Gershenfeld, Ph.M., B.Sc., P.D., Professor of Bacteriology and Hygiene and Director of the Bacteriological and Clinical Chemistry Laboratories at the Philadelphia College of Pharmacy and Science. Fabrikoid. Price, $2.75. Pp. 272, with 36 illustrations. Philadelphia: Lea & Febiger, 1933.

In this small book the author presents the approved laboratory methods of urinalysis together with a proper evaluation of the practical value of the results obtained from the various tests. He rightly emphasizes in his preface the importance of the closest cooperation between the physician and the laboratory worker. The relative value of the different tests and the practical importance of the knowledge gained from each are emphasized throughout the book. Part I discusses the structure and function of the kidney, the physical characteristics of the urine, its chemical composition, and abnormal constituents of urine. Part II contains the qualitative and quantitative tests and microscopic examination. Part III includes special tests and discusses urinary calculi, tests infrequently performed or of doubtful clinical value, and tests for kidney function. An appendix describes apparatus used occasionally in urinalysis, as colorimeter, nephelometer and spectroscope. There is also a list of reagents. Physicians, technicians and nurses who desire an authoritative monograph on every phase of urine examination will be delighted with this new book.

The Treatment of Functional Nerve Cases by the Method of Neuro-Induction: An Essay. By Leonard Inkster, M.A., M.R.C.S., Hon. Clinical Assistant of the Tavistock Square Clinic. Boards. Price, 3s 6d. Pp. 73. London: H. K. Lewis & Company, Ltd., 1933.

This method consists of waking suggestion given during physical relaxation of the patient. The author's manner is sincere but chatty. Nothing novel is offered to neuropsychiatrists; non-neurologic practitioners may grasp the plan readily and use it effectively in certain types of neurotic maladjustment.

Food and the Principles of Dietetics. By Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital and to the Hospital for Sick Children, Great Ormond Street, and V. H. Mottram, M.A., Professor of Physiology at King's College of Household and Social Science, University of London. Seventh edition. Cloth. Price, $7.25. Pp. 630, with 33 illustrations. Baltimore: William Wood & Company, 1933.

This summation of established knowledge and important data on the science of foods and dietetics has been brought down to the date of publication. It is a valuable textbook for students and practitioners of medicine and those desiring a general basic knowledge of foods and nutrition. All classes of common foods and the important problems of nutrition are given appropriate attention. References to important original papers are given in footnotes. The subject matter is simply and clearly presented.

Leçons sur l'alimentation: Physiologie, régimes. Par Giovanni Lorenzini, professeur de chimie biologique à la Faculté de médecine de l'Université royale de Milan. Paper. Price, 36 francs. Pp. 325. Paris: Masson & Cie, 1933.

This monograph is probably an elaboration of the series of lectures given by Professor Lorenzini to his students in nutrition. In the first five lectures he covers in an excellent manner the physiologic factors underlying the metabolism of food. The sixth lecture deals rather briefly with the vitamins and ferments. The seventh lecture is a classification of the various foods into their common divisions of proteins, fats and carbohydrates, with a description of the chief foods of each group; also the composition and caloric value of the foods in common use are given. In the remaining seven lectures are given the underlying principles of treatment of the various diseases in which dietary management is important. In the allocation of space it would seem that the dietary problems connected with diabetes are treated too briefly and without sufficient detail for the practical dietetic management of this disease. Unfortunately there is no index and the table of contents is brief.

Probation and Criminal Justice: Essays in Honor of Herbert C. Parsons. Edited by Sheldon Glueck, Professor of Criminology, Harvard Law School. Cloth. Price, $3. Pp. 344. New York: Macmillan Company, 1933.

Glueck and his collaborators discuss probation under five headings: significance and legal background of probation, organization and administration of probation, the granting of probation, the art of probation, and the growth and extent of probation. Under these headings, individual contributors write of the promise of probation, its legal problems, the organization of a probation service, the probation problems of a trial judge, case histories, social workers' technic, analytic psychiatry and criminology, the growth of federal and state probation in the United States, and probation services in other countries. To one who is interested only in the medical aspects of probation, the book may prove disappointing. Only one chapter is devoted to this topic, the chapter on analytic psychiatry and criminology, by Dr. Bernard Glueck, based on a purely psychoanalytic foundation. Whether it proves entirely satisfying to the medical reader will probably depend on the extent to which he accepts the id, the ego, and the super ego as the whole of life. The volume is, however, well worth a careful reading by any one who is interested in the establishment of criminal justice.

Urology in Women: A Handbook of Urinary Diseases in the Female Sex. By E. Catherine Lewis, M.S., F.R.C.S., Surgeon to the Royal Free Hospital, London. Cloth. Temporary price, $1.75. Pp. 76, with 25 illustrations. Baltimore: William Wood & Company, 1933.

As the preface states, this is a little book, containing a scanty seventy-three pages of text in addition to numerous halftone and colored illustrations. The subject matter is divided into sections corresponding in context to the four anatomic divisions of the urinary tract; namely, the urethra, bladder, ureter and kidney. After a brief description of the anatomy of each division and the most frequent pathologic changes found, the more common methods of treatment are described. The anatomic descriptions and methods of diagnosis are abbreviations of those found in the standard textbooks. The forms of treatment recommended are those in more common use, and it is to be regretted that no attempt is made to discuss newer procedures. This is particularly striking in the section on renal infections (pyelitis and pyelonephritis); the more recent advances in dietary and intravenous chemical treatment are omitted. The book

will serve as a short outline of the better established ideas concerning diseases of the female urinary tract, their cause, pathology and treatment, and should be of assistance to those desiring this information compiled in a single treatise.

Medicolegal

Malpractice: Failure to Exercise Requisite Skill Constitutes Negligence.—The plaintiff fractured her right leg near the ankle. She was under the defendant's care for a few days and then placed herself under the care of another physician. Ten days after this change of physicians, gangrene made it necessary to amputate her foot. The plaintiff sued the defendant, contending that the gangrene was caused by his negligence and unskilfulness in putting on a cast and that he was negligent and unskilful in other ways. From a judgment in favor of the defendant, the plaintiff appealed to the Supreme Court of Missouri, division number 2. The trial court, she contended, had directed a verdict for the defendant unless the jury found that he had been guilty of negligence, whereas he was charged with both negligence and unskilfulness. She was entitled to a verdict, she contended, if the defendant was either negligent or unskilful and the loss of her leg resulted from his negligence or unskilfulness.

The plaintiff, said the Supreme Court, did not charge the defendant with undertaking to treat her without *possessing* the requisite knowledge and skill; she charged him only with failure *to exercise* care and skill. Failure of a physician to exercise the degree of care and skill required of him is negligence. Technically the instruction of the trial court was correct when it told the jury that the plaintiff charged the defendant with negligence, which the plaintiff was required to prove. The term "negligence," said the court, covers not only lack of care but also the failure to exercise skill which the defendant possesses or the attempt to exercise skill which the defendant knows he does not possess. *Rothschild* v. *Barck*, 324 Mo. 1121, 26 S. W. (2d) 760. The judgment of the trial court was affirmed.—*Sennert v. McKay (Mo.), 56 S. W. (2d) 105.*

When Statute of Limitations Begins to Run: When It Is Suspended by Fraudulent Concealment of Facts.—On Jan. 24, 1927, the plaintiff sued the defendant physician for malpractice. She claimed that when he treated her for a "slight and incipient sore throat" in January, 1919, he negligently and unnecessarily removed her tonsils, that he failed to apply proper local treatment after their removal, and that her throat became "poisoned and infected" as a consequence. She contended that the acts and omissions of the defendant from the time of the removal of her tonsils, in 1919, until the termination of her professional relations with him, in October, 1926, constituted "a perpetual series of continuing negligence." The defendant physician, with intent to deceive her and to induce her to refrain from bringing an action against him, she alleged, fraudulently concealed his negligence from her; she relied on his representations and was misled thereby; only since Oct. 2, 1926, did she become aware that the condition of her throat was proximately caused by the defendant's negligence. He, the plaintiff claimed, was estopped by his alleged deceit from pleading that her cause of action was barred by the statute of limitations. The defendant demurred to the complaint, contending that the action was so barred. The trial court sustained his demurrer, and the plaintiff appealed to the Supreme Court of Utah.

Ordinarily, said the Supreme Court, the cause of an action based on the neglect of duty accrues at the time of the neglect, and the statute of limitations begins to run then. In this case, however, the plaintiff alleged not only that the defendant negligently and unskilfully operated on her in 1919 but also that he continued to treat her throat in a negligent manner until 1926. The case falls properly, the court thought, within the rule stated in *Sly* v. *Van Lengen*, 120 Misc. 420, 198 N. Y. S. 608, wherein it was said:

> Where a physician in performing an operation failed to remove a sponge from plaintiff's pelvic cavity, and did not remove it thereafter, though he continued to treat her for more than 2½ years, plaintiff's cause of action was not barred . . . because suit was not brought till more than 2 years after the operation; the tort being continuing, and the period of the statute not beginning to run until the physician ceased his treatments.

The Supreme Court concluded, therefore, that the cause of action in this case did not accrue until the termination of the defendant's services in 1926.

By the weight of authority, said the court, a fraudulent concealment of a cause of action will postpone the operation of the statute of limitations until the discovery of the fraud. As a general rule, however, in the absence of a trust or fiduciary relation between the parties, a withholding or concealing of known facts is not such a fraudulent concealment as will prevent the running of the statute. But in this case the relation of physician and patient existed, and the plaintiff necessarily imposed trust and confidence in the defendant, her physician. Although the defendant's alleged assurances that treatment would cure the plaintiff's throat were in the nature only of an opinion, and therefore not a proper basis for an action for failure to cure, nevertheless they were pertinent and relevant to the purposes of the suit. They had a bearing on the confidence and reliance placed in the defendant by the plaintiff when she submitted to his long continued treatment and on her delay in enforcing whatever cause of action she had. The plaintiff's statement of facts was possibly not so specific and certain as to be beyond criticism, but though the facts may have been insufficiently stated, the complaint was not for that reason subject to a general demurrer. Sufficient facts, the Supreme Court concluded, were stated with respect to the alleged fraud, and the trial court erred in holding that on the face of the plaintiff's complaint her action was barred. The judgment of the court below was reversed and the case remanded.—*Peteler v. Robison (Utah) 17 P. (2d) 244.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Boston, September 18-22. Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Executive Secretary.

American College of Surgeons, Chicago, October 9-13. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Public Health Association, Indianapolis, October 9-12. Dr. Kendall Emerson, 450 Seventh Avenue, New York, Acting Executive Secretary.

American Roentgen Ray Society, Chicago, September 25-30. Dr. Eugene P. Pendergrass, 3400 Spruce Street, Philadelphia, Secretary.

Associated Anesthetists of the United States and Canada, Chicago, October 8-12. Dr. F. H. McMechan, 318 Hotel Westlake, Rocky River, Ohio, Secretary.

Association of American Medical Colleges, Minneapolis, Oct. 30-Nov. 1. Dr. Fred C. Zapffe, 5 South Wabash Avenue, Chicago, Secretary.

Association of Military Surgeons of the United States, Chicago, September 25-27. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.

Central Society for Clinical Research, Chicago, Nov. 3. Dr. Lawrence D. Thompson, 903 University Club Building, St. Louis, Secretary.

Delaware, Medical Society of, Wilmington, September 26-27. Dr. W. O. La Motte, 604 Medical Arts Building, Wilmington, Secretary.

Idaho State Medical Association, Twin Falls, September 18-19. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Indiana State Medical Association, French Lick, September 25-27. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Secretary.

Inter-State Postgraduate Medical Association of North America, Cleveland, Oct. 16-20. Dr. W. B. Peck, 12½ East Stephenson Street, Freeport, Ill., Managing Director.

Kansas City Southwest Clinical Society, Kansas City, Mo., October 3-5. Dr. Lewis G. Allen, 601 Minnesota Avenue, Kansas City, Kan., Secretary.

Mississippi Valley Conference on Tuberculosis, Kansas City, Mo., October 6. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

Nevada State Medical Association, Las Vegas, September 29-30. Dr. Horace J. Brown, 120 North Virginia Street, Reno, Secretary.

New England Surgical Society, Boston, September 29-30. Dr. J. M. Birnie, 14 Chestnut Street, Springfield, Mass., Secretary.

Oregon State Medical Society, Portland, Oct. 26-28. Dr. Albert W. Holman, 364 Washington Street, Portland, Secretary.

Pennsylvania, Medical Society of the State of, Philadelphia, October 2-5. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Southern Minnesota Medical Association, New Ulm, September 25. Dr. M. C. Piper, Mayo Clinic, Rochester, Secretary.

Vermont State Medical Society, Barre, October 5-6. Dr. W. G. Ricker, 31 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Lynchburg, Oct. 24-26. Miss Agnes V. Edwards, 1200 East Clay Street, Richmond, Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology Baltimore

3: 111-180 (March) 1933

Viability of Tubercle Bacilli: Effect of Mechanical Shaking and Chemicals Used in Concentration Technic. J. E. Pottenger, Monrovia, Calif.—p. 111.

*New and Simplified Medium for Pasteurella Tularensis and Other Delicate Organisms. B. W. Rhamy, Fort Wayne, Ind.—p. 121.

Study of Pathogen-Selective Cultures in Relation to Vaccine Therapy. F. Boerner and M. Solis-Cohen, Philadelphia.—p. 125.

Study of O and H Agglutinins in Typhoid and Endemic Typhus Fever. H. A. Kemp, Dallas, Texas.—p. 133.

Exploring Death. H. J. Corper, Denver.—p. 145.

Lymphomatous Compression of Spinal Cord: Case Report of Hodgkin's Type. F. H. Lamb, Davenport, Iowa.—p. 155.

*"Sensitivity" to Sulphydryl. S. P. Reimann, Philadelphia.—p. 167.

Pasteurella Tularensis.—Rhamy has evolved a medium that gives a luxuriant growth of Pasteurella tularensis within from three to four days, of creamy gray color, furnishing ample material for making an antigen. The new medium is made by mixing Spray's Bacto hemoglobin in equal parts with Bacto cystine heart agar, the latter of which is essentially a modified Huntoon hormone agar. To prepare 500 cc. of the medium, 28 Gm. of Bacto cystine heart agar is dissolved by boiling in 250 cc. of distilled water, and 5 Gm. of Bacto hemoglobin is dissolved in an equal amount of water and strained through gauze in order to remove any large undissolved particles. Both solutions are sterilized separately for twenty minutes at a pressure of 15 pounds. When the solutions have cooled to 50 or 60 C. they are mixed, dispensed in test tubes and incubated to test the sterility.

Sensitivity to Sulphydryl.—Reimann painted local areas of the skin of the arms of 450 normal persons with a 1 per cent alcoholic solution of thiocresol and a control area on the other arm with a 1 per cent solution of cresol. Of these, eighteen presented an itching rash. Of seventy-seven similarly treated persons presenting carcinomas, five reacted, all of whom had open, ulcerating wounds; the region around the wound also reacted. The special significance of this "sensitivity" to the sulphydryl group is unknown, but it is probably related to the general phenomena of sensitivity to specific chemical groups and arrangements. Since the use of the sulphydryl group in p-thiocresol and other compounds is increasing, attention is drawn to this phenomenon. At present it is recommended that, in those who react, treatment be discontinued and that such treatment of ulcerating carcinomatous wounds be avoided in this group.

Archives of Neurology and Psychiatry, Chicago

29: 935-1178 (May) 1933

*Meningeal Fibroblastomas of Cerebrum: Clinicopathologic Analysis of Seventy-Five Cases. C. H. Frazier and B. J. Alpers, Philadelphia.—p. 935.

Encephalopathia Alcoholica (Polioencephalitis Haemorrhagica Superior of Wernicke). Lauretta Bender and P. Schilder, New York.—p. 990.

Partial Agenesis of Corpus Callosum. R. C. Baker and G. O. Graves, Columbus, Ohio.—p. 1054.

Pathology of Central Nervous System in Diseases of Liver: Experiments with Animals and Human Material. L. A. Crandall and A. Weil, Chicago.—p. 1066.

Rôle of Vestibular Nuclei in Cortical Innervation of Eye Muscles. E. A. Spiegel, Philadelphia.—p. 1084.

*Myelomalacia in Streptococcus Haemolyticus Meningitis: Clinicopathologic Study of Rare Complication in Meningitis. G. A. Blakeslee, A. Ferraro and M. F. Jones, New York.—p. 1098.

Dystonia Musculorum Deformans: Clinicopathologic Study. C. Davison and S. P. Goodhart, New York.—p. 1108.

Meningeal Fibroblastomas of Cerebrum.—Frazier and Alpers analyzed a group of seventy-five cases of meningeal fibroblastoma. Most of the tumors were located over the anterior half of the brain. There were twenty-two frontal fibroblastomas. Among these have been identified four types of syndrome. There is no picture common to all the frontal fibroblastomas. Mental symptoms were lacking in three fifths of the cases. In the eighteen precentral fibroblastomas, weakness and motor jacksonian attacks were important aids in diagnosis. Eighteen fibroblastomas were over the temporal lobes. Only eight caused weakness or hemianopia, and two aphasia. Eight tumors were over the parietal lobes. Sensory jacksonian attacks and astereognosis were helpful in establishing a localization. Of the nine tumors of the occipital lobe, four caused hemianopia and four aphasia. The authors call attention to the relative intactness of central vision in cases of tumors of the occipital lobe, as contrasted with cases of tumor of the temporal lobe, in which central vision is usually implicated. From the pathologic standpoint, they favor the term meningeal fibroblastoma, calling attention to the fact that these tumors do not arise in every instance from the arachnoid. They call attention to the problem of hyperostoses in the fibroblastomas, reporting an instance of thinning of the overlying bone with invasion of the bone by tumor cells, casting some doubt on the hypothesis that the hyperostoses are due to proliferation of osteoblasts under stimulus of the invading tumor cells.

Myelomalacia in Meningitis.—Blakeslee and his associates present a case of myelomalacia of sudden onset as the result of a Streptococcus haemolyticus meningitis. The necropsy observations consisted of leptomeningitis and pachymeningitis in the lumbosacral region, with occlusion of the vessels of the spinal cord by pressure and the formation of a thrombus, resulting in myelomalacia. Above this, an area of softening in the left posterior horn and column, secondary to a thrombosis of the posterior spinal artery, accounted for anesthesia up to the level of the ninth thoracic dermatome. The authors believe that, in their case, laminectomy to assist in drainage might possibly have prevented the development of the localized pachymeningitis and leptomeningitis with the resultant softening of the cord.

California and Western Medicine, San Francisco

38: 337-408 (May) 1933

Medicine at the Crossroads. R. L. Wilbur, Stanford University.—p. 337.

Report of Committee on the Costs of Medical Care: Its Significance to the Medical Profession. A. C. Christie, Washington, D. C.—p. 341.

Some Trends in Medical Economics. R. G. Leland, Chicago.—p. 348.

Antivivisection. C. Rowell, Berkeley.—p. 352.

Dehydration in Heat Exhaustion and Fatigue. C. Van Zwalenburg, Riverside.—p. 354.

Focal Infections: In Relation to Cardiac and Vascular Disease. W. H. Strietmann, Oakland.—p. 358.

*Onchocercosis in North America. H. G. Johnstone and A. E. Larsen, San Francisco.—p. 361.

Pan-American Medical Association: Report on Fourth Congress. C. P. Mathé, San Francisco.—p. 365.

Onchocercosis.—Johnstone and Larsen point out that onchocercosis may seem a medical curiosity to physicians of the temperate zone since it has no immediate attendant public health problems, but one should become acquainted with it for the following reasons: 1. Clinical manifestations of onchocercosis resemble many conditions of the temperate zone. 2. The Eusimulium fly is widespread in certain localities throughout the Western states. 3. The disease has shown a definite tendency toward a northern migration. 4. The numerous Mexican immigrants in the United States provide an opportunity for the presence of a carrier of Onchocerca caecutiens. This may lead subsequently to the contamination of our own simuliid species. If this occurs, a case of the disease is sure to make its appearance and, once present, it is difficult to eradicate. There is no known drug that will kill the wandering microfilariae. The encysted adults are also safe from the action of any known filariacide. Consequently there remains only the removal of the source of infection; that is, surgical removal of the nodules. Frequently this procedure is followed by a remarkable clearing of symptoms. This is true especially in the acute cases, in which the relief occurs over night. But even when the disease has become chronic this surgical procedure is of benefit. The case should not be dismissed but observed from time to time to watch for the development of nodules that may have been too small to be detected at the

time of the previous examinations. Frequently a residual blindness may remain, which, however, can often be helped by iridectomy.

Delaware State Medical Journal, Wilmington

5: 71-106 (April) 1933

Psychiatry in College. M. A. Tarumianz, Farnhurst.—p. 71.
Inheritance of Mental Deficiency. P. F. Elfeld, Farnhurst.—p. 76.
Psychosis with Cerebral Syphilis: Case with Negative Serology. J. W. Ballard, Farnhurst.—p. 80.
Juvenile Delinquency. C. Uhler, Farnhurst.—p. 81.
Carbon Dioxide and Oxygen in Treatment of Schizophrenia. C. R. Bennett, Farnhurst.—p. 85.
Juvenile Paresis: Case. M. Littner, Farnhurst.—p. 88.

Journal of Biological Chemistry, Baltimore

100: 603-822 (May) 1933

Studies on Magnesium Deficiency in Animals: III. Chemical Changes in Blood Following Magnesium Deprivation. H. D. Kruse, Elsa R. Orent and E. V. McCollum, Baltimore.—p. 603.
Character of Dermatitis-Producing Factor in Dietary Egg White as Shown by Certain Chemical Treatments. Helen T. Parsons and Eunice Kelly, Madison, Wis.—p. 645.
Studies on Physiology of Pyrimidines: VII. Metabolism of Isobarbituric Acid in Man. J. A. Stekol and L. R. Cerecedo, New York.—p. 653.
Substances Which Interfere with Antimony Trichloride Test for Vitamin A. Ruth E. Corbet, Helen H. Geisinger and H. N. Holmes, Oberlin, Ohio.—p. 657.
Concentration of Soy Bean Urease: New Method for Purification of Enzymes. J. S. Kirk, Ithaca, N. Y.—p. 667.
Digitalis Glycosides: VII. Isomeric Dihydrogitoxigenins. W. A. Jacobs and R. C. Elderfield, New York.—p. 671.
Maximum Rotations of Phenyl Compounds. P. A. Levene and R. E. Marker, New York.—p. 685.
Copper Iodometric Reagents for Sugar Determination. P. A. Shaffer and M. Somogyi, St. Louis.—p. 695.
Growth, Reproduction and Lactation in Absence of Parathyroid Glands. F. L. Kozelka, E. B. Hart and G. Bohstedt, Madison, Wis.—p. 715.
Adsorption of Vitamin B (B_1) by Plant Tissue: I. Adsorption of Vitamin B (B_1) by Brassica Chinensis When Pickled with Salt and Rice Bran. C. D. Miller and Marjorie G. Abel, Honolulu, Hawaii.—p. 731.
Is Blood Protein Amide Nitrogen a Source of Urinary Ammonia? IV. Improved Aeration Set for Use in Transfer and Measurement of Small Quantities of Ammonia. E. F. Williams, Jr., and T. P. Nash, Jr., Memphis, Tenn.—p. 737.
Derivatives of Glucuronic Acid: II. Acetylation of Glucuron. W. F. Goebel and F. H. Babers, New York.—p. 743.
*Practical Method for Simultaneous Estimation of Lactose and Glucose in Urine. I. S. Kleiner and H. Tauber, New York.—p. 749.
Salt Economy in Extreme Dry Heat. D. B. Dill, B. F. Jones, H. T. Edwards and S. A. Oberg, Boston.—p. 755.
Configurational Relationship of Hydrocarbons: V. Optical Rotations of Hydrocarbons of Isopropyl Series. P. A. Levene and R. E. Marker, New York.—p. 769.
Cystine Content of Human Serum Proteins. L. R. Tuchman and Miriam Reiner, New York.—p. 775.
Tyrosine and Cystine Content of Serum Proteins. Miriam Reiner and H. Sobotka, New York.—p. 779.

Determination of Lactose and Dextrose in Urine.—Kleiner and Tauber outline a new colorimetric method for the quantitative determination of lactose and dextrose in the urine. The procedure is as follows: To 1 cc. of urine in a graduated 20 cc. cylinder, 1 cc. of a 4 per cent solution of copper sulphate is added, and then enough barium hydroxide solution to make the fluid faintly alkaline to litmus (approximately p_H 7.5 to 8); 5 cc. is usually sufficient. Enough water is added to make a total volume of 20 cc. and the solution is mixed and filtered. If a faint opalescence persists, the results will not be affected and the trace of barium present need not be removed for either of the two determinations to follow. Two cubic centimeters of this filtrate is pipetted into a Folin-Wu sugar tube. Two similar tubes are prepared for standards, one of which contains 0.2 mg. of dextrose in 2 cc. and the other 0.4 mg. of dextrose in 2 cc. To each of the three tubes 2 cc. of monose reagent is added and the tubes are heated in boiling water for eight minutes and cooled for two minutes. This reagent consists of a 1 per cent solution of barium hydroxide, to which is added 5 drops of a 1 per cent solution of sodium bisulphite for each 25 cc. of reagent just before it is used. Another set is run with the Benedict alkaline copper reagent simultaneously, with the same amounts of filtrate, standards and reagent, boiling for six minutes and cooling for two minutes. To each of the tubes in both sets 2 cc. of Benedict's color reagent is added and mixed with the contents. The tubes are allowed to stand for two minutes, water is added to the 25 cc. mark, the contents are mixed thoroughly and colorimetric comparisons are made. If the color is too dark, the determination must be repeated with diluted urine for the copper-barium precipitation. With this procedure the monose method yields dextrose values that correspond closely with values obtained by the Benedict method.

Journal of Industrial Hygiene, Baltimore

15: 117-164 (May) 1933

Roentgenologic Aspects of Pneumonoconiosis and Its Medicolegal Importance. H. K. Pancoast and E. P. Pendergrass, Philadelphia.—p. 117.
Toxicity of Osmium Tetroxide (Osmic Acid). F. R. Brunot, Washington, D. C.—p. 136.
Presence of Lead Dust and Fumes in Air of Streets, Automobile Repair Shops and Industrial Establishments of Large Cities. J. J. Bloomfield and H. S. Isbell, Washington, D. C.—p. 144.
Sulphur Dioxide in Pittsburgh Air. C. Schade, Pittsburgh.—p. 150.
Safety Regulations for Refrigeration Equipment. Y. Henderson and W. V. Batson, New Haven, Conn.—p. 154.
Effect of Viosterol on Excretion of Lead. F. B. Flinn and Adelaide Ross Smith, New York.—p. 156.

Journal of Lab. and Clinical Medicine, St. Louis

18: 765-872 (May) 1933

Multiple Primary Malignant Neoplasms. H. H. Hurt and A. C. Broders, Rochester, Minn.—p. 765.
Studies of Experimental Muscle Degeneration: IV. Factors of Carbohydrate Metabolism in Muscle Repair. D. K. Fishback and H. R. Fishback, Chicago.—p. 777.
Id.: V. Nitrogen Metabolism of Degenerated Muscle in Acute Injury and Repair. D. K. Fishback and H. R. Fishback, Chicago.—p. 781.
Comparison of Effects of Morphine, Pantopon, Codeine, Narcotine and Papaverine on Respiration of Rats and Rabbits. O. W. Barlow, Cleveland.—p. 785.
Changes in Distribution Ratio of Constituents of Blood and Spinal Fluid in Meningitis. S. J. Kopetzky and Ella H. Fishberg, New York.—p. 796.
*Studies on Antipepsin with New Quantitative Method for Its Determination. A. Slive, Chicago.—p. 801.
Effect of Short Radio Waves on Biologic Activities of Some Bacterial Species. Marion M. Johnston, Toronto, Canada.—p. 806.
Studies on Normal Blood: III. Guinea-Pig. J. L. Brakefield, Birmingham, Ala.—p. 812.
*Colorimetric Determination of Plasma Proteins. Marie Andersch and R. B. Gibson, Iowa City.—p. 816.
Studies in Serology of Syphilis: XII. Modifications in Technic and Interpretation of Wassermann Reaction. H. Eagle, Baltimore.—p. 821.
Method for Studying Activity of Intact Skeletal Muscle. C. E. Leese, Boston, and H. M. Hines, Iowa City.—p. 841.
*Histochemical Method for Detection of Cholesterol. H. W. Larson, New York.—p. 848.
Expression of Hemoglobin Concentrations on Molar Basis. R. D. Barnard, Chicago.—p. 849.
Instrument for Rapid Preparation of Potato Cylinders for Diagnostic Culture Purposes. S. Germain, Denver.—p. 853.
Graphic Method of Determining Certain Numerical Factors in Metabolism. W. Goldfarb, New Haven, Conn.—p. 855.

Studies on Antipepsin.—Slive tested the serums of twelve normal, healthy rabbits for the detection and relative quantitative estimation of antipepsin by the following procedure. It was found that half the animals showed an antipeptic activity of the blood serum and that the other half did not. Rabbits, injected intravenously with pepsin over a period of time, showed the development of an antipeptic activity in the blood serums. This antipeptic activity is due to a real antibody; namely, antipepsin. The liver is the organ with the largest store of antipepsin. The method is as follows: Ten small tubes are set up and to each is added 0.25 cc. of a fresh preparation of 0.7 per cent solution of dried egg albumin; 0.5 cc. of a 2.5 per cent solution of hydrochloric acid; 0.1 cc. of a 0.04 per cent solution of serum; respectively to each tube 2, 1.2, 0.6, 0.24, 0.12, 1, 0.75, 0.3, 0.15 and 0.1 cc. of a 0.0005 per cent stock solution of pepsin in 10 per cent glycerin, and enough water to make 3 cc. The control set up is exactly like the other except that, instead of containing the serum to be tested, it has either the serum of normal, noninjected animals or a quantity of additional solution of albumin the protein content of which is exactly the same as that of the serum being tested. The tubes are placed in an incubator at 37.5 C. In an hour they are removed, and to the contents of each is added 1 cc. of a 4.5 per cent solution of trichloracetic acid. The undigested protein is immediately precipitated as a white cloud, the intensity of which varies inversely with the degree of peptic digestion of the protein. The measurement of peptic digestion may be done by either visual or chemical methods. In the former, the tubes are held up to the light and the cloudiness in the control is compared to that of the tube which contains the serum in question. Chemical estimations are most accurate and are made by measuring the amount of nonprotein nitrogen in each tube by an

adaptation of the Folin-Farmer method for total nitrogen determinations in the urine. The author also gives a technic for the determination of the antipeptic effect residing in the tissues of the animals that had received injections of pepsin and the effect of glycerin tissue extracts on peptic digestion of albumin, the procedures being similar to the method described.

Colorimetric Determination of Plasma Proteins.—Andersch and Gibson describe a simplification of the Wu colorimetric method for the determination of plasma proteins. They have found that not only a maximum chromogenic value but approximately equal tyrosine equivalents for the plasma proteins are obtained by heating these for half an hour with 10 per cent sodium hydroxide. On the basis of these similar tyrosine equivalents they also offer modifications for the determination of total protein of the plasma and the spinal fluid which give values of sufficient clinical accuracy, irrespective of the protein partition. They present a table that gives a comparison of protein values obtained by this method and values based on nitrogen content.

Histochemical Method for Cholesterol.—Larson outlines a rapid method for the detection of cholesterol in various regions of a section. The reagent used consists of a 25 per cent solution of antimony pentachloride in chloroform, to which a few crystals of antimony trichloride have been added in order to remove any free chlorine. The procedure is as follows: The section is transferred to a slide, blotted three times with filter paper and treated with 1 or 2 drops of the antimony pentachloride reagent. A dark brown color develops instantly whenever the reagent comes in contact with cholesterol or its esters. The excess reagent should be allowed to evaporate. The white powdery substance, which forms sometimes, disappears on blowing the breath over the slide. The section should be washed with 1 or 2 drops of chloroform and mounted in glycerin. Unsaturated fatty acids are stained a light orange and may thus be differentiated from the dark brown of the cholesterol. In thin sections containing only traces of cholesterol, the fumes of antimony pentachloride may be used more satisfactorily than the chloroform reagent. A small glass rod is dipped in the antimony pentachloride and held over the section until the pentachloride fumes have thoroughly penetrated the tissue. This obviates the necessity of using chloroform, which may remove the cholesterol. After the brown cholesterol compound has formed, the section may be washed with 1 or 2 drops of chloroform and the washings removed from the slide by means of filter paper. The brown compound of cholesterol is not readily soluble in chloroform. It does, however, dissolve slowly, yielding a deep purple. If the section is mounted in chloroform, the deep brown slowly takes on a purplish hue and thereby furnishes a further differentiation between cholesterol and unsaturated fats. When mounted in glycerin, a green brown develops. There is no evidence of the color fading, even when the slide is exposed to sunlight for days.

Journal of Nervous and Mental Disease, New York

77: 457-560 (May) 1933

Additional Case of Hemangioblastoma of Retina and Cerebellum, with Note on Lindau's Disease. H. R. Viets, Boston.—p. 457.
Psychogenic Factors and Psychotherapy in Hyperthyreosis and Rapid Heart Imbalance. B. Mittelmann, New York.—p. 465.
Familial Myoclonia Occurring in Three Successive Generations. F. G. Lindemulder, Ann Arbor, Mich.—p. 489.
*The Heel Tap, a Pathologic Reflex. S. M. Weingrow, New York.—p. 492.

Heel Tap.—Weingrow presents a new sign that occurs in pyramidal tract disease. The reaction consists of tapping the heel of the foot while the foot is held in a position comfortable to the examiner and the patient. A positive response consists of a fanning and, in many cases, a plantar flexion of the toes. In fact, any movement of the toes following the tapping of the heel should be considered pathologic. The author studied more than 200 normal persons and found no reaction of the toes to the tapping of the heel. Even in psychoneurotic persons with markedly exaggerated tendon reflexes so enhanced that when any part of the foot except the heel was tapped there resulted a plantar flexion of the foot, there wasn't the slightest reaction of the toes to tapping of the heel, but positive reactions of the heel test were found in more than fifty patients presenting lesions of the pyramidal tract. The strongest reactions were noted in patients suffering from multiple sclerosis when there was an absence of permanent rigidity of the feet. The heel sign was checked with the Babinski, Oppenheim, Gordon and Chaddock reflexes. It was never present when the Babinski reaction was absent, although the latter was present without the former. The heel tap reaction was present in many persons in whom the Babinski reaction was positive but the Oppenheim, Gordon and Chaddock signs were absent.

Journal of Pediatrics, St. Louis

2: 517-640 (May) 1933

Study of Child Care in First Two Years of Life. Ruth W. Washburn and Marian C. Putnam, New Haven, Conn.—p. 517.
Infant Mortality: Causes of Death During First Year of Life as Determined by Necropsy in Five Hundred and Seventeen Cases. J. B. Gillespie, Rochester, Minn.—p. 537.
*Metabolism of Iron in Anemia of Premature Infants. C. E. Snelling, Toronto, Canada.—p. 546.
Osteomalacia: Report of Case Treated by Large Doses of Viosterol and Quartz Lamp Therapy Without Improvement. G. N. Krost, Chicago.—p. 553.
Sino-Auricular Heart Block in Childhood. G. F. Weinfeld, Ravinia, Ill.—p. 559.
Acute Poliomyelitis: Studies of Streptococci Isolated from Throats and Raw Milk in Relation to One Epidemic. E. C. Rosenow, H. M. Rozendaal and E. T. Thorsness, Rochester, Minn.—p. 568.
Chronic Sialodochoparotitis with Recurrent Subacute Exacerbations. S. Londe and M. D. Pelz, St. Louis.—p. 594.
*Spontaneous Nontuberculous Pyopneumothorax as Complication of Pneumonia in Children. M. B. Gordon and A. S. Manne, Brooklyn.—p. 603.
Ileocecal (Enterogenous) Cyst. C. E. Bradley and C. C. Hoke, Tulsa, Okla.—p. 614.
Mongoloid Idiocy in Negro Infant. J. E. Dunlap, Dallas, Texas.—p. 615.
Antiques of Pediatric Interest. T. G. H. Drake, Toronto, Canada.—p. 617.

Iron Metabolism in Anemia.—According to the observations of Snelling, the results of studies of iron balance and pigment excretion in a series of seven premature infants tend to establish certain features of this condition and lead to possible explanations of the disorder. Premature infants tend to have a positive iron balance when fed according to the method commonly employed. The pigment excretion is not excessive. The anemia affects the red blood cells and hemoglobin equally, develops in spite of treatment, and improves spontaneously. The anemia appears to be due to a failure to utilize the available supplies rather than to a lack of the substances that compose hemoglobin. An etiologic hypothesis which would explain many of the observed phenomena portrays failure of utilization of the substances that compose hemoglobin due to inadequate medullary space coincident with the premature cessation of hematopoietic activity in the liver.

Spontaneous Nontuberculous Pyopneumothorax.—Gordon and Manne state that spontaneous pyopneumothorax complicating pneumonia in children probably occurs with more frequency than one would infer from the meager literature on the subject. They report four such cases in children ranging in age from 1 to 7 years. All recovered but one who had two recurrences in two years. The classic picture of an acute onset is the exception in this type. It was present in only one of the authors' cases. Pyopneumothorax may elude clinical recognition because of its failure to produce physical signs commensurate with its extent. The most constant and suggestive signs in their cases were diminished or absent breath sounds, with dulness and flatness over an extensive area. The importance of routine fluoroscopic and roentgen examination in the course of pneumonia in infants and children and the careful daily observation of slight changes in the physical signs are stressed.

Kansas Medical Society Journal, Topeka

34: 163-202 (May) 1933

Oil of Wintergreen (Methyl Salicylate) Poisoning: Report of Case. H. L. Dwyer, Kansas City.—p. 166.
Scoliosis in Children. C. B. Francisco, Kansas City.—p. 168.
Some Phases of Congenital Syphilis. C. C. Dennie, Kansas City, Mo.—p. 170.
Infarction of Liver Following Cholecystectomy: Case. R. W. Kerr, Kansas City.—p. 175.
Colloid Carcinoma of Breast: Case Report. C. C. Nesselrode and M. A. Walker, Kansas City.—p. 178.
Tuberculosis of the Spleen Simulating Banti's Disease. M. J. Rumold, Kansas City, and T. G. Orr, Kansas City, Mo.—p. 179.
Speech Defects. E. T. Gibson, Kansas City, Mo.—p. 182.
Early and Late Treatment of Burns. E. C. Padgett, Kansas City, Mo.—p. 184.

Maine Medical Journal, Portland

24: 69-90 (May) 1933

Embolectomy for Peripheral Embolism: Report of Case. I. M. Webber, Portland.—p. 79.
Cancer Problem in Portland and Vicinity. E. E. O'Donnell, Portland.—p. 82.

Medical Annals of District of Columbia, Washington

2: 99-126 (May) 1933

Irradiation Treatment of Hyperthyroidism. G. E. Pfahler, Philadelphia.—p. 99.
Etiology of Pernicious Anemia: Review. W. B. Daniels, Washington.—p. 104.
Heart Disease in Washington, D. C.: Study of Etiologic Types and Factors of Race, Age and Sex in One Thousand Two Hundred Cases. L. T. Gager and W. L. Dunn, Washington.—p. 112.
*Cure of Mastoid Fistula with Fat Graft: Report of Case. A. B. Bennett, Washington.—p. 117.

Cure of Mastoid Fistula with Fat Graft.—Bennett treated a mastoid fistula successfully by fat grafts. The edge of the fistula was removed by a circular incision and the periosteum elevated an inch or more posteriorly to permit approximation without tension. The fistula was thoroughly curetted to remove the lining mucous membrane and then a free fat graft from the abdominal wall was introduced, filling the fistula from the antrum to the surface. Anticipating some shrinkage of the graft, this last procedure was slightly overdone. A small rubber dam was placed as a drain along the inferior wall of the fistula and the wound was closed with heavy silk sutures, the skin and periosteum being included in each suture. There was no reaction from the operation and the patient left the hospital on the fourth day. The sutures were removed on the sixth day. There was an accumulation of serosanguineous fluid in the abdominal wound, which, when it was released, was followed by perfect healing. For the following six weeks there was only a slight oily discharge from the postauricular wound. Seven weeks after the fat graft, the wound was dry for the first time and quite depressed in the center. Four months later there was little depression and the patient was discharged as cured.

Medical Journal and Record, New York

137: 353-396 (May 3) 1933

Health in Relation to Personality. I. S. Wile, New York.—p. 353.
Local Rest in Pulmonary Tuberculosis. C. R. Howson, Los Angeles.—p. 357.
Mechanism of Acidosis in Diabetes and Nephritis. G. Ginsburg, Philadelphia.—p. 360.
Use of Kidney Substance in Nephritis. J. S. Chaffee and H. R. Hansell, Sharon, Conn.—p. 363.
Perinephric Abscess. W. R. Brooksher, Jr., Fort Smith, Ark.—p. 365.
Analysis of Five Hundred Cases of Acute Appendicitis. J. L. Gottesman, Brooklyn.—p. 366.

Nebraska State Medical Journal, Lincoln

18: 161-200 (May) 1933

Management of Acute Intestinal Obstruction. T. G. Orr, Kansas City, Kan.—p. 163.
Electrocardiography: Review of Five Hundred Cases. M. C. Andersen, Omaha.—p. 166.
Practical Side of Medicine. A. E. Cook, Randolph.—p. 170.
Differential White Blood Cell Count. E. B. Reed, Lincoln.—p. 173.
Some Responsibilities of General Practitioner in Care of Mental Patients. T. M. Barber, Norfolk.—p. 175.
Preliminary Report of Arthritis Section of Department of Public Health of City of Lincoln, Neb. J. E. M. Thomson, Lincoln.—p. 178.
*Match Dermatitis: Report of Unusual Case. D. J. Wilson, Omaha.—p. 183.
Agranulocytic Angina: Case Report. K. C. Baker, Holdrege.—p. 184.
Report of McDowell's First Ovariotomy, Published in Eclectic Repertory in 1810: Three Cases of Extirpation of Diseased Ovaries. E. McDowell, Danville, Ky.—p. 186.

Match Dermatitis.—Wilson reports an unusual case of match dermatitis. Although the patient was in the habit of lighting matches with the nail for years, no trouble developed until a burning portion of the match head lodged under the nail. The eyelids were involved three weeks later. Four months later a patch developed on the left thigh (approximately under the pocket in which matches were carried). Under a soothing preparation, all itching and burning disappeared in forty-eight hours. Only erythema remained about the eyes and on the left thigh. After four days, matches were again carried in the pocket for about twelve hours. Within four hours, itching and burning with acute erythema returned. Soothing preparations were again used for a week and discontinued. There has been no return of the eruption. The type of eruption produced may range from a mild erythema with slight burning or itching to an acute markedly erythematous patch with oozing. The prognosis is good and the treatment is the avoidance of matches and match boxes and the local use of a soothing preparation.

New England Journal of Medicine, Boston

208: 921-970 (May 4) 1933

Homo Chirurgicus. H. Cushing, Brookline, Mass.—p. 922.
Medical Supervision of Normal Children Under School Age: Modern Concepts of Its Scope. H. C. Stuart, Boston.—p. 932.
Id.: Present Extent of Its Application. P. Van Ingen, New York.—p. 935.
Child Health Conferences and the Doctor's Bread and Butter. L. W. Hill, Boston.—p. 942.
Important Factors in Treatment of Compound Fractures. P. P. Swett and S. H. McPherson, Hartford, Conn.—p. 946.
Explosibility of Nitrous Oxide-Ether Mixtures. L. F. Sise, Boston.—p. 949.

New Orleans Medical and Surgical Journal

85: 793-878 (May) 1933

Review of Ninety-Six Cases of Abscess of Liver. H. B. Gessner, New Orleans.—p. 793.
Psychiatric Clinic: Its Function. H. Daspit, New Orleans.—p. 797.
Eyes and Teeth. C. A. Bahn, New Orleans.—p. 800.
Painless Coronary Occlusion. I. I. Lemann, New Orleans.—p. 807.
Place of Electrocardiography in Medicine. W. L. Rosen, New Orleans.—p. 811.
*Importance of Reticulocyte Count in Diagnosis and Treatment of Anemia. F. M. Johns, New Orleans.—p. 814.
Artificial Insemination: Report of Cases. J. Cohen, New Orleans.—p. 817.
Rôle of Anterior Pituitary Luteinizing Hormone in Threatened Abortion: Preliminary Report. J. T. Witherspoon, New Orleans.—p. 822.

Reticulocyte Count in Anemia.—Johns points out that, in the methods described for staining reticulocytes, the mixture of dye and blood results in a heavy precipitate, which he has been able to obviate by the following method: A full drop of a saturated solution of brilliant cresyl blue is spread over the middle portion of a glass slide and allowed to dry. A small drop of blood is placed on the stain and immediately covered with a cover glass, which is placed so that one corner of the cover glass projects beyond the slide. After one or two minutes, the cover glass is lifted and transferred with a portion of adherent blood to a clean slide. The cover glass is pressed down firmly to produce a thin even layer and an oil immersion lens is used. In counting the large number of cells necessary to determine the percentage of reticulocytes accurately, it is necessary to constrict the field of the microscope.

New York State Journal of Medicine, New York

33: 557-622 (May 1) 1933

Decline of Medicine as an Art. H. W. Haggard, New Haven, Conn.—p. 557.
Master in the House of Medicine. A. M. Schwitalla, St. Louis.—p. 562.
Roentgen Ray as an Aid in Early Recognition of Serious Disease of the Colon. W. H. Stewart and H. E. Illick, New York.—p. 570.

33: 623-672 (May 15) 1933

Medical Service for the Nation. E. H. Cary, Dallas, Texas.—p. 623.
Tonsillectomy in Presence of Thyroid Disease. H. G. Bullwinkel, New York.—p. 627.
Further Results Obtained with Rabbit Ovulation Test as Diagnostic Procedure. K. M. Wilson and G. W. Corner, Rochester.—p. 629.
Ringworm of Toes in Students and Dispensary Patients. E. Muskatblit, New York.—p. 632.
Insulin in Hypoglycemia. C. B. F. Gibbs, Rochester.—p. 638.
Arrested Shoulders in Vertex Presentation. M. Hornstein, New York.—p. 639.
Some Neurologic Aspects of Suprarenal Insufficiency. L. H. Cornwall, New York.—p. 642.
*Pustulosis Vacciniformis Acuta (Juliusberg) Followed by Anuria and Tetanic Spasticity: Complicating Disease of Infantile Eczema. H. Feit, New York.—p. 645.
Physical Therapy in Gynecologic Office Practice. Virginia Tannenbaum, Buffalo.—p. 647.
Value of Antitoxin in Treatment of Scarlet Fever. L. A. Kohn and A. I. Josey, Rochester.—p. 651.

Pustulosis Vacciniformis Acuta.—Feit presents a case of pustulosis vacciniformis acuta of Juliusberg terminating in recovery in an infant aged 4 months. The characteristics of the disease were the outbreak of vesicle pustules simulating those of vaccinia and limited chiefly to the exposed areas in a child suffering from infantile eczema. High fever and symptoms of irritation of the central nervous system seem characteristic of this disease. The lesions were distinguished from

impetigo by their vacciniform character, and from chickenpox, smallpox and vaccinia by their distribution and evolution, by the absence of history of infection, and by the course of the disease. It is possible that the disease is due to some filtrable virus; otherwise one must assume an increased virulence of the staphylococcus or a decreased resistance on the part of the patient. The author treated the lesions by applying boric acid ointment and exposing the child to air. The child seemed to improve until a fresh outbreak of impetiginous lesions appeared on the chest. The temperature during this time varied from normal to 105 F. The ointment was then discontinued and a solution of 3 per cent mercurochrome applied and generalized ultraviolet treatments were begun. In three days the spread of the eruption ceased but two days later the child, who had not voided for thirty hours, developed a spastic retraction of the neck and spasticity of the legs and appeared dehydrated. Infusions were given of 120 cc. of a 5 per cent solution of dextrose intravenously, 150 cc. of physiologic solution of sodium chloride hypodermically, and 0.8 cc. of chloral hydrate by rectum. After six days, after repeated clyses, the temperature became normal and the general condition improved. Two days later the ultraviolet treatment was discontinued. Compresses of potassium permanganate solution 1 : 6,000 were applied every three hours and the lesions allowed to dry in the intervals. Phenobarbital, 0.015 Gm., was given two times a day when necessary to control restlessness. The eyes were irrigated twice a day with boric acid. Under this regimen the skin continued to improve and the temperature remained normal. Twenty days after medical intervention the crusts had disappeared, the child gained weight, and he was discharged practically cured.

Philippine Islands Med. Association Journal, Manila

13: 191-234 (April) 1933

Blood Pressure in Aged Filipinos: Preliminary Report. G. T. Lantin, Manila.—p. 191.
Determination of Urea Concentration Factor as Test of Kidney Efficiency in a Puerperal Woman: Preliminary Report. H. Acosta-Sison, F. Barican and J. F. Leiva, Manila.—p. 196.
Certain Adjustments in Health Work in City of Manila Are Required to Attain Maximum Efficiency. T. Corpus, Manila.—p. 198.
Mycozel as Fungicide. C. M. Africa, Manila.—p. 204.
What Is New in Tuberculosis? E. Verano, Manila.—p. 209.

Public Health Reports, Washington, D. C

48: 499-520 (May 12) 1933

*Protective Value of Convalescent Serums of São Paulo Exanthematic Typhus Against Virus of Rocky Mountain Spotted Fever. R. R. Parker and G. E. Davis.—p. 501.
Rocky Mountain Spotted Fever and Boutonneuse Fever: Study of Their Immunologic Relationship. L. F. Badger.—p. 507.

Protective Value of Convalescent Serums.—Parker and Davis tested the serums of six laboratory animals that recovered from São Paulo exanthematic typhus for their protective value against the virus of Rocky Mountain spotted fever. Three of these serums afforded complete or essentially complete protection, the fourth a degree of protection nearly as good, while the other two showed definite but less marked protective properties. These results suggest a close relationship between the two viruses.

Radiology, St. Paul

20: 331-416 (May) 1933

Radiculitis. M. J. Hubeny, Chicago.—p. 331.
*Comparative Value of Serologic and Roentgenologic Diagnoses of Congenital Syphilis. H. B. Podlasky and N. Enzer, Milwaukee.—p. 337.
Roentgenologic Study of Thoracic Aorta. S. Brown, Cincinnati.—p. 343.
Pulmonary Abscess, Bronchiectasis and Pulmonary Neoplasms: Clinical Aspects. E. H. Funk, Philadelphia.—p. 353.
Id.: Roentgenologic Aspect. J. T. Farrell, Jr., Philadelphia.—p. 360.
Id.: Bronchoscopic Aspects. L. H. Clerf, Philadelphia.—p. 365.
Id.: Surgical Aspects. J. B. Flick, Philadelphia.—p. 367.
Thymus: More Recent Findings as to Function and Therapy. L. J. Friedman, New York.—p. 380.
Diagnostic Problems in Consideration of Surgical Lesions of Kidney. I. H. Lockwood and W. Stewart, Kansas City, Mo.—p. 386.

Congenital Syphilis.—Podlasky and Enzer state that serologic examination of mothers and babies at or shortly after delivery should be adopted as a routine procedure. In the presence of positive serologic observations in the mother or the baby, roentgenologic examination of the osseous system of the baby should be made. Positive serologic observations in the mother and the baby, or in the baby alone, should be considered indicative of syphilis until proved otherwise by follow-up studies. Roentgenologic examination of such infants will establish lesions of the osseous system in a great percentage of cases. Negative roentgenologic observations should not be considered contradictory evidence of the presence of syphilis; they merely indicate the absence of osseous syphilis at birth. Roentgenologic evidence of osseous syphilis may be obtained in the absence of positive serologic observations in the baby. All instances of a positive reaction of the maternal blood and a negative reaction of the blood of the cord serve to emphasize the importance of rechecking the serologic and roentgenologic examinations at intervals of from three to six months. Negative serodiagnosis of the blood of the cord and negative roentgenologic observations in the presence of maternal syphilis are not absolute evidences of the absence of syphilis in the new-born. If they are bilateral, exostoses may be of syphilitic origin.

Rhode Island Medical Journal, Providence

16: 49-64 (April) 1933

Contraction Ring, Causing Dystocia. F. S. Hale, Providence.—p. 54.

Southwestern Medicine, Phoenix, Ariz.

17: 145-178 (May) 1933

The Medical Profession's Relation to the Industrial Commission. J. N. Miles, Phoenix, Ariz.—p. 147.
Industrial Surgery in Arizona. R. F. Palmer, Phoenix, Ariz.—p. 148.
Public Health and Medical Cooperation. F. E. Doucette, Phoenix, Ariz.—p. 151.
Diagnosis and Treatment of Carcinoma of the Breast. A. Soiland, Los Angeles.—p. 153.
Problems and Management of Gallbladder Disease. A. P. Kimball, Yuma, Ariz.—p. 156.

Virginia Medical Monthly, Richmond

60: 67-132 (May) 1933

Etiology and Prevention of Heart Disease. J. E. Wood, Jr., University.—p. 67.
Acute and Subacute Endocarditis. W. B. Martin, Norfolk.—p. 71.
Coronary Disease. G. B. Lawson, Roanoke.—p. 74.
Use of Drugs in Heart Disease. W. B. Porter, Richmond.—p. 78.
Blastomycosis: Report of Three Cases. W. Clarkson and A. Barker, Petersburg.—p. 83.
Varicose Veins and Their Treatment. W. L. Powell, Roanoke.—p. 87.
Certain Features of Etiology of Goiter. J. H. Smith, Richmond.—p. 90.
Vaccine Treatment in Chronic Arthritis. R. M. Hoover, Roanoke.—p. 97.
Delivery Room Management of Occiput Posterior Positions.—R. B. Nicholls, Norfolk.—p. 99.
Fractures Around Elbow Joint in the Hands of the General Practitioner. T. K. McKee, Saltville.—p. 102.
Intra-Ocular Foreign Body: Case Report. J. A. Pilcher, Jr., Roanoke.—p. 103.
Pilonidal Sinus. G. W. Horsley, Richmond.—p. 104.
Multiple Bilateral Primary Lesions with Bilateral Adenopathy in Tularemia. S. D. Blackford, University—p. 107.
Influence of Pregnancy and Delivery on Physical and Mental Health of Child. H. R. Masters, Richmond.—p. 108.
Use of Concentrated Glucose in Treatment of Acidosis in Children. R. H. DuBose, Roanoke.—p. 110.

West Virginia Medical Journal, Charleston

29: 193-240 (May) 1933

Peanut Worms and Pellagra: Is the Indian Moth, Plodia Interpunctella, the Cause of Pellagra? H. P. deForest, New York.—p. 193.
Treatment of Pleural Effusions. G. H. Barksdale, Charleston.—p. 209.
*Use of Sodium Salicylate and Magnesium in Treatment of Rheumatic Fever and Acute Infectious Arthritis. A. N. Foxe, New York.—p. 212.
Argentaffin Tumors of Appendix. M. O. Oates, Durham, N. C.—p. 216.
Binovular Twins: Report of Case. H. G. Steele, Bluefield.—p. 219.

Sodium Salicylate and Magnesium in Treatment of Rheumatic Fever and Arthritis.—The studies of Foxe indicate that doses of 90 grains (6 Gm.) a day of sodium salicylate when combined with 60 grains (4 Gm.) of magnesium oxide give results in acute infectious arthritis and rheumatic fever equivalent to those obtained when doses of 150 grains (10 Gm.) of sodium salicylate, given with 150 grains of sodium bicarbonate, are used. However, this does not necessarily mean that the combined drug (magnecylate) is a grain-for-grain equivalent therapeutically to sodium salicylate. Equivalence or nonequivalence of such effects will only be known when physicians have decided on the minimal effective dose of salicylate. The toxic effect of salicylates, combined with either magnesium oxide or sodium bicarbonate, is minimal. In this study only moderate doses were employed, and cases with cardiac complications were excluded.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 859-904 (May 20) 1933

New Treatments for Old: Delivered Before the Medical Society of London, May 8, 1933. Horder.—p. 859.
Some Medical Aspects of Boarding School Life. R. Miller.—p. 863.
Modern Views on Mechanism of Gallstone Formation. D. H. Patey.—p. 866.
Etiology and Treatment of Pernicious Anemia. J. A. Gunn.—p. 869.
Crypto-Empyema. A. R. Short.—p. 870.
*Sodium Soneryl as Basal Hypnotic: Report of One Hundred and Fifty Cases. S. E. Birdsall.—p. 871.

Sodium Ethyl Butyl Barbiturate as Basal Hypnotic.—Birdsall used sodium ethyl butyl barbiturate (the free acid is known as neonal) as a basal hypnotic before general anesthesia in 150 patients whose ages varied from 6 to 70 years, on whom operations were performed for diseases of the ear, nose and throat, the abdomen, the urogenital tract, bone, the breast and neck, and for hernia. Sodium ethyl butyl barbiturate was taken orally, in capsules containing 0.15 Gm. each. At first, two capsules (0.3 Gm.) were given at 8 p. m. the day before operation. On the day of operation, sodium ethyl butyl barbiturate was given one hour before the induction of anesthesia, this dose being regulated according to the weight of the patient; for example, patients weighing from 84 to 120 pounds (38 to 55 Kg.) were given 0.45 Gm. of sodium ethyl butyl barbiturate. Doses of 0.45 Gm. were generally found not to produce sleep in adults, and the dosage finally adopted for patients weighing less than 140 pounds was 0.6 Gm., between 140 and 168 pounds (64 and 76 Kg.) 0.75 Gm., and for patients weighing more than 168 pounds 0.9 Gm. Children aged less than 12 years were given 0.3 Gm. of sodium ethyl butyl barbiturate followed by a further dose of 0.15 Gm. if the child was not asleep or drowsy after half an hour. The capsules were given one hour, and $\frac{1}{75}$ grain (0.001 Gm.) of atropine from fifteen to thirty minutes before operation. Ninety-seven of the patients were asleep on reaching the operating room, forty-six were sleepy, in five no definite effect was noted, and two patients were excited. All the patients were breathing naturally, with no trace of cyanosis and no stertor. Sleep was produced in from thirty to forty-five minutes. The induction of anesthesia was smooth, the length of time taken being the same as in nonpremedicated patients. In the majority of instances the amount of ether used was considerably less than would otherwise have been necessary. Recovery from the anesthetic occurred in most cases after two or three hours. After being awake for an hour or two, the patient usually slept for the next six to twelve hours and on waking had no recollection of having been awake previously. The urine was examined on the day following the administration of sodium ethyl butyl barbiturate in order to determine the presence or absence of bile pigments or albumin. In no case was either detected. The author has not administered sodium ethyl barbiturate in cases of senility, pulmonary disease, renal impairment or arteriosclerosis.

Indian Medical Gazette, Calcutta

68: 245-304 (May) 1933

Some Bypaths of Orthopedic Surgery. W. L. Harnett.—p. 245.
Creeping Eruption Produced by Hookworm Larvae. P. A. Maplestone.—p. 251.
Arneth Count, with Particular Reference to Its Diagnostic Value in Asthma. H. W. Acton and Dharmendra.—p. 257.
Berberine Sulphate in Oriental Sore: Notes. E. W. Hayward.—p. 265.
Account of Epidemic of Cerebrospinal Fever in Borstal Institution. P. D. Chopra and M. S. Chadha.—p. 265.
Spinal Percaine Anesthesia. T. H. Somervell.—p. 270.
Observations on Epidemic of Whooping Cough at the Lawrence Royal Military School, Sanawar: Note on Investigation of Skin Reaction in This Disease. C. F. J. Cropper and J. M. Ram.—p. 271.
*"Novostiburea" in Treatment of Kala-Azar. S. N. Sur and S. K. Neogi.—p. 273.

Treatment of Kala-Azar.—Sur and Neogi used the sodium salt of urea stibamine (novostiburea) in the treatment of twenty-seven cases of kala-azar. From their observations they draw the following conclusions: 1. The compound can be safely given by both the intravenous and the intramuscular route. 2. The tissue does not become painful after intramuscular injection. 3. The toxicity of the drug is so low that it can be given daily without untoward symptoms. 4. There is a possibility of a daily injection of this drug effecting a much earlier cure. In the twenty patients to whom the drug was given intravenously and was effective in stopping fever, the average number of injections required before the cessation of the fever was 3.6 (in four it took two, and in ten only three injections), whereas in the seven patients treated by the intramuscular route this average was 4.5, and the earliest cessation of fever was reported after three injections in three patients. Of the seventeen patients who completed the full course of treatment, fifteen were discharged as cured, the average number of injections required being nine. In the four adult patients who completed treatment the quantity of this compound required was an average of 2.35 Gm. A marked gain in weight and an improvement in the blood picture was noticed during the course of the treatment. In four of the patients who completed the treatment, the aldehyde and Chopra's stiburea test had become negative; two had been given daily injections

Irish Journal of Medical Science, Dublin

No. 89: 193-232 (May) 1933

Practical Problems in Hospital Planning. L. G. Pearson.—p. 193.
Plea for More Realistic Blackboard Drawing. T. T. O'Farrell.—p. 198.
Note on Use of Thorotrast (Hepatosplenoradiography). H. V. Tighe.—p. 203.
Vesical Pain. A. A. McConnell.—p. 209.
Clinical Interpretation of Fractures of Neck of Femur. A. Chance.—p. 212.

Journal of Laryngology and Otology, Edinburgh

48: 309-388 (May) 1933

Ventilation of Nose and Accessory Sinuses: Oscillographic Method of Investigation. J. F. O'Malley.—p. 309.
Note on Tuberculosis of Larynx and Light Treatment. A. J. Cemach.—p. 326.
Statistical Note from Aural Department, St. John's Hospital, Budapest. A. Rejtö.—p. 330.

Journal of Pathology and Bacteriology, Edinburgh

36: 333-492 (May) 1933

Pathology of Sudden Death: Review of One Hundred and Ninety-Eight Cases "Brought in Dead." T. H. B. Bedford.—p. 333.
Pneumococcic Infections in Infancy and Childhood. J. W. S. Blacklock and Katharine J. Guthrie.—p. 349.
Group of Aberrant Members of Genus Corynebacterium Isolated from Human Nasopharynx. M. M. Barratt.—p. 369.
Quantitative Determination of Bacteriophage Activity and Its Application to Study of Twort-d'Herelle Phenomenon. G. Dreyer and Margaret L. Campbell-Renton.—p. 399.
Development of Agglutinins for Paschen Bodies in Experimental Vaccinia, with Illustrative Charts. J. C. G. Ledingham.—p. 425.
Rhinosporidiosis. J. F. D. Shrewsbury.—p. 431.
Hemolysin Produced by Streptococci in Serum Mediums as an Antigen and Its Effect on Antistreptolysin in Vitro. E. W. Todd.—p. 435.
Experimental Arterial Disease Produced by Cholesterol and Vitamin D. C. V. Harrison.—p. 447.
Biology of Fermenting Sarcinae. J. Smit.—p. 455.
*Production of Toxins by Clostridium Welchii. L. E. Walbum and C. G. Reymann.—p. 469.

Production of Toxins by Clostridium Welchii.—Walbum and Reymann state that ordinary veal broth containing 1 per cent peptone and 0.25 per cent dextrose (p_H 7.6 to 7.8, liquid petrolatum layer) is a suitable medium for the production of Clostridium welchii. The addition of fresh muscle and coagulated meat is superfluous. Calcium carbonate ought to be admixed to neutralize the acids formed, but in order that this neutralization may be sufficiently effective the distribution of the calcium carbonate must be kept up by continuous stirring during the entire growth. Under these experimental conditions the largest quantity of toxin was found after a cultivation period of ten or eleven hours at 37 C. and after from twenty-one to twenty-four hours at 31 C. The minimum lethal dose (in vivo into mice) varied between 0.015 and 0.03 cc. The addition of defibrinated horse blood or of phenanthrenequinone to broth does not cause enhanced toxin production, nor does the cultivation in broth boiled with liver offer any advantages. Whey with peptone gives the same results as ordinary meat broth with peptone. Under the experimental conditions described the nonspecific acute poisonous substance (Wassermann, Kojima) is not formed in measurable quantities in the substrate containing up to 0.75 per cent of dextrose. With a content of 2.25 per cent of dextrose, however, it is produced in considerable quantities. The specific, thermolabile toxin has also an acute killing effect in larger doses (about three to five times

the minimum lethal dose). The toxin is most stable at p_H 6. The proteolytic (albumose-splitting) enzyme has its optimal action between p_H 7 and 8. The gelatin-melting enzyme has an optimal action at about p_H 6, but having passed a minimum of between p_H 7 and 8 the action of this enzyme ascends again with rising alkalinity. In view of the investigations made, the theory advanced by Dernby and Walbum regarding the production of the bacterial toxins has been applied to Clostridium welchii toxin. The antitoxin-binding qualities appear to maintain themselves fairly constant during the growth of the culture, notwithstanding the fact that the curve for the direct action of the poison gradually declines.

Medical Journal of Australia, Sydney

1: 603-636 (May 20) 1933

Varicose Veins and Ulcers: Their Etiology and Treatment. A. L. Dawkins.—p. 603.
Pathology in Its Relation to Diagnosis and Treatment of Cancer in Cancer Clinic, Adelaide Hospital. L. B. Bull and B. S. Hanson.—p. 609.
Diabetes and Eye Disease. G. H. Hogg.—p. 615.

1: 637-668 (May 27) 1933

Nasal Sinusitis in Relation to General Infection. C. M. Eadie.—p. 637.
Calcium Therapy in Treatment of Allergies and Its Use in the Form of "Afenil." I. Maxwell and D. Zacharin.—p. 642.
*New Intradermal Reaction in Ancylostomiasis. A. B. Vattuone.—p. 645.
Anthrax in East Africa. R. M. Buntine.—p. 647.
Combined Radiation Treatment in Pelvic Cancer. H. M. Moran.—p. 647.

Intradermal Reaction in Ancylostomiasis.—Vattuone describes a new intradermal reaction in ancylostomiasis, performed in the following manner: A drop of the antigen is injected into the derma on the medial aspect of the forearm of each patient. About 6 cm. from this first puncture a second injection, that of the control, is made. From fifteen to thirty minutes after the injection, the antigen gradually forms a clear whitish blister, surrounded by a hyperemic circle about 2 cm. in diameter, with an irregular dusky margin. The control shows the blister much less distinctly, being not as white and the ring being only about 1.2 cm. in diameter and paler than the surrounding skin. Patients more severely affected with the parasites gave a much more intense intradermal reaction as compared with carriers, while the latter still gave a decided, although less intense, reaction. The maximum effect was noted from thirty to forty minutes after injection, before it slowly disappeared. The effect of the antigen on persons free from injection with this parasite was negative. To obtain the antigen the author collected the feces of a few patients affected with the disease and showing numerous eggs of the parasite on microscopic examination after a two day diet consisting of milk and after energetic treatment with thymol. The antigen was prepared from the ancylostomas, some males but the majority females, and collected into small sterilized glass tubes sealed by flame. Other phials containing physiologic solution of sodium chloride were sealed in a similar way as controls.

South African Medical Journal, Cape Town

7: 317-352 (May 27) 1933

Some Factors in Heart Disease. E. E. Wood.—p. 319.
Etiology of Primary Bronchial Carcinoma. A. M. Moll.—p. 323.
Enterostomy in Acute Obstruction. M. A. Lautré.—p. 326.
Practical Points in Treatment of Ear, Nose and Throat Diseases. C. E. Jones-Phillipson.—p. 329.
*Some Considerations on Atebrin as an Active Antimalarial Measure. P. N. H. Labuschagne.—p. 332.

Antimalarial Treatment.—Labuschagne states that out of the legion of drugs on the market that are supposed to cure malaria only three should be considered: quinine, plasmochin simplex and an amino-acridine derivative (atebrin). The triumphs and failures of quinine are well known. One feature, however, is undeniable: that quinine does not in a great number of cases have a permanent lethal effect on the parasite, and this alone is sufficient to rule it out of any blood-sterilizing campaign. With the advent of plasmochin simplex, greater possibilities seemed to present themselves. The author has been unable to confirm the observations that plasmochin simplex materially assists the action of quinine on the asexual parasite. He concludes that the cycle of infection must be broken in another way, i. e., by complete eradication of the parasite, and the only drug at present that seems to hold out any hope in this direction is this amino-acridine derivative.

Presse Médicale, Paris

41: 1201-1216 (July 29) 1933

*Sarcoma of Pancreas. H. Mondor, Paulette Gauthier-Villars and A. Sicard.—p. 1201.
Pure Sulphurated Oil Extracted from Bituminous Rocks in Jura Used in Minor Surgery, Gynecology and External Diseases. J. le Calvé.—p. 1205.

Sarcoma of Pancreas.—Mondor and his associates discuss the symptomatology and diagnosis of primary fibrosarcomas of the pancreas on the basis of eighteen cases found in the literature and of one personal observation. The symptomatology of sarcoma of the pancreas closely resembles that of a benign pancreatic cyst. Its exterior walls are usually smooth and regular as those of a cyst but they may be irregular. It is usually of cystic structure containing a hematic fluid; rarely it is solid. Its interior may be smooth like a cyst or filled with irregular vegetative masses. Microscopically, it is characterized by a fusocellular proliferation of connective tissue originating in the frame of the gland or its capsule or in the fibrous wall of a preexisting cyst. The adjacent glandular tissue is normal. The subjective symptoms vary with the location. There is usually intense paroxysmal epigastric pain, especially severe several hours after eating. Ascites is frequent and abundant. Icterus and signs of pancreatic insufficiency are rare. Loss of weight is rapid and severe. Roentgenography is valuable in the diagnosis and localization of tumors of the pancreas. If the tumor is located at the head of the pancreas, characteristic duodenal deformations may appear, such as enlargement of the duodenal outline, changes of the duodenal bulb, which is pushed upward and to the left and fills poorly, indistinct appearance of the folds of the mucosa, and a decrease of peristalsis shown by stasis of the barium in the stomach and duodenum. If the body of the pancreas is involved, the tumor is usually more voluminous and the roentgenographic deformations affect the stomach and the colon. If the tumor infiltrates across the lesser omentum, it pushes the stomach down and toward the left; if it is between the stomach and the colon, both these organs are displaced downward. In the presence of a supposed cyst of the pancreas rapidly increasing in size, more painful than normal, accompanied by ascites and having a cachectic evolution, sarcoma should be suspected and laparotomy is indicated. If the interior wall of the sac is smooth, histologic examination is required for diagnosis. Total extirpation is dangerous because of the size of the tumor and its adhesions. The late results were poor even in the most favorable case and the late results of marsupialization, performed in a few cases, were no better.

Annali Italiani di Chirurgia, Naples

12: 709-852 (June 30) 1933

Tuberculosis of Pancreas. M. Canavero.—p. 709.
*Chloruremia in Burns. A. G. Chiariello.—p. 737.
Contribution to Study of Rhabdomyoma. E. Santi.—p. 745.
Postoperative Bronchopulmonary Complications in Relation to Anesthesia. G. Pelliccia.—p. 760.
*Bacteriophage in Ambulatory Treatment of Localized Inflamed Lesions. R. Galli.—p. 783.
Hemangioblastoma of Tongue. G. Figurelli.—p. 811.

Chloruremia in Burns.—From experiments with burns produced by the thermocautery in dogs and from determinations made according to Bang's micromethod, Chiariello demonstrated that there is a diminution of the chloride content of the blood, almost always proportional to the size and degree of the burn. The author states that an improvement resulting from treatment with intravenous injections of hypertonic solutions of sodium chloride must be interpreted not as the effect of an antitoxic action or of a replacement of the chlorides but as the effect of the diuresis caused by such solutions and the consequent elimination of toxic products.

Bacteriophage in Treatment of Inflamed Lesions.—Galli cites the results obtained by the use of bacteriophage in the treatment of various forms of pyogenic infections. Of forty-five cases treated, 86.6 per cent showed favorable results. As the contents of the inflammatory lesion become liquefied, the author aspirates them with a small trocar or a large needle, introduced laterally through the healthy skin. This obviates the need of a surgical incision leading to a disfiguring scar and avoids the formation of a fistula. The rapid and complete liquefaction of the necrotic tissues facilitates their elimination. After instillation of bacteriophage, the severe painful tension

suddenly disappears and thermic reactions are temporary. Bacteriophage therapy is otherwise innocuous and painless. Better results are obtained in treating infections of recent date. Chronic suppurations of long standing are usually more resistant to bacteriophage.

Policlinico, Rome

40: 1201-1240 (July 31) 1933. Practical Section

Primary Carcinoma of Pancreas: Case. L. Preti.—p. 1201.
Atebrin in Treatment of Malaria. G. Marotta and U. Peratoner.—p. 1205.
*Clinical Note on Alcohol Therapy in Pulmonary Diseases. F. Calvi.—p. 1207.
Esophageal Syphilis: Case. V. Ponzoni.—p. 1209.
Primary Infantile Atrophy and Insulin Therapy. A. Belardinelli.—p. 1226.

Alcohol Therapy in Pulmonary Diseases.—Calvi presents the theory that alcohol, retained by the cells of the reticulo-endothelial system of the lung, acts locally on the cause of the infection, diminishing the activity and virulence of the micro-organisms and stimulating the active production of antibodies by the endothelial tissue. The author slowly administered ethyl alcohol intravenously in daily doses of from 20 to 50 cc. to forty-seven patients, ten of whom had pulmonary tuberculosis and acute nontuberculous bronchopneumonic complications, fifteen specific pulmonary diseases and subsequent bronchopneumonic complications and hemoptysis, six fibrous tuberculosis, bronchiectasis and chronic suppurations, and eight nonspecific bronchiectatic forms in the acute stage; eight were nontuberculous patients with pneumonia and influenzal bronchopneumonia. The treatment was well tolerated. Obliteration of the vein after intravenous injection did not occur in any case. The renal, circulatory and hepatic conditions were in no way affected. In chronic tuberculous forms, if the alcohol did not modify the pathologic course it aided sometimes in the reactivation, either hastening the regression of congestive factors or exerting its action on the associated bacterial flora. In common influenzal infections with bronchopneumonic complications, the effect of the alcohol on resolution was notable.

Dermatologische Wochenschrift, Leipzig

97: 1099-1126 (July 22) 1933

*Dermatolysis (Loose Skin), with Especial Consideration of Its Pathogenesis and Relations to Dermatitis Atrophicans Progressiva. H. Fuhs.—p. 1099.
Experiences with an Acridine Dye in Psoriasis and Erysipelas. C. C. Hoffmann and L. Vargas.—p. 1108.

Dermatolysis (Loose Skin) and Its Relation to Progressive Atrophy of Skin.—Fuhs states that it is wrong to identify the cutis laxa sive hyperelastica (rubber skin) with dermatolysis. The so-called rubber skin is occasionally hereditary, and the skin, without hanging loose, has an extraordinary elasticity. Such persons are sometimes able to pull the skin of the neck or of the forehead over the nose, and the skin of the back in a high fold. With this elasticity there occasionally occurs a hyperextensibility of the joints (rubber man). Histologic examination reveals no great discrepancy from the normal skin, except that in some cases myxomatous degeneration of the collagenic connective tissue has been noted. Dermatolysis, however, is a disorder characterized by an abnormal looseness of the skin, which in turn results in the formation of large folds on various parts of the body. These folds may occasionally form sac-like hanging pads, which, after stretching, do not return to their original position because of their laxity and inelasticity. The author describes five cases of dermatolysis. In four of these cases the dermatolysis concurred with diffuse progressive atrophy of the skin, and from this it appears possible that dermatolysis has the same pathogenesis as progressive atrophy; namely, a congenital deficiency in the resistance of the elastic tissues toward various external and internal injuries (infections, endocrine disturbances, nervous influences, colds and so on). The author thinks that the simultaneous occurrence and the similar histologic aspects of the two conditions make it appear probable that dermatolysis is perhaps an advanced stage of progressive atrophy. However, because his material is rather small, and also because some reports in the literature differ from his observations, he considers it advisable to adhere for the present to the theory that considers dermatolysis an independent disease entity.

Dermatologische Zeitschrift, Berlin

67: 1-128 (July) 1933

Extensive Multiple Lupoid or Leproid Granulomas of Skin. R. Schimpel.—p. 1.
Scleropoikiloderma. P. Keller.—p. 14.
Hemorrhage and Blood Impairment After Arsphenamine. S. Ehrmann.—p. 24.
*Investigations on Pathogenesis of Bakers' Eczema. N. Van Vonno and J. Struycken.—p. 43.

Bakers' Eczema.—Van Vonno and Struycken point out that, in spite of a decreased consumption of flour and bread, bakers' eczema is increasing. They think that this incongruence can be explained by the increase in allergic disorders. Because some investigators have ascribed the recent increase in bakers' eczema to the substances that are added to the flour to make it more suitable for baking, they made tests on bakers with and without eczema and on control persons. In experiments with various types of wheat, rye and rice flours, they gained the impression that one of the main causes of the predisposition to eczema must exist in wheat flour. They made tests with various substances that are added to the flour to make it more suitable, but they reached the conclusion that these substances, particularly ammonium persulphate, are not responsible. In discussing the treatment, they point out that some advise a change of occupation for bakers who are subject to eczema; but since this is not always possible, they recommend tests to determine to what type of flour the patient is susceptible, and, after the eczema has been cured, desensitization treatment. They call attention to errors and wrong conclusions in the studies of the investigators who considered the addition of ammonium persulphate as the main cause of bakers' eczema and they point out that bakers' eczema was known long before this substance or any other was ever added to the flour and that consequently, it is unnecessary to prohibit the use of these substances.

Deutsche medizinische Wochenschrift, Leipzig

59: 1029-1068 (July 7) 1933

Beginning of Psychoses. K. Schneider.—p. 1029.
Circulation and Nervous System. F. Kauffmann.—p. 1034.
*In What Case Can Kahn Reaction Replace Wassermann Reaction? Annemarie Köhler.—p. 1036.
Cholelithiasis and Gastric and Duodenal Ulcer in Diseases of Spinal Cord. H. Wantoch.—p. 1038.
Directions for Air Filling of Cerebrospinal Fluid Spaces for Purpose of Roentgenologic Visualization. G. Schaltenbrand.—p. 1039.
*Eye Disorders Caused by Dyeing of Eyelashes. W. Bab.—p. 1041.
Therapeutic Use of Absinth (Artemisia Absinthium). R. F. Weiss.—p. 1042.
Incidence of Night Blindness (Hemeralopia) in Men and Women. G. Joachimoglu and G. Logaras.—p. 1043.
Malignant Bone Tumors. M. Krabbel.—p. 1044.
Progressive Neural Muscular Atrophy with Peculiar Etiology and Symptomatology: Case. B. Beyermann.—p. 1046.
Transcutaneous Therapy. C. Gleichmann.—p. 1047.
Extent of Exemption from Transaction Tax of Medical Activities. Hoeres.—p. 1048.
Vitamins as Oxidation Catalyzers. C. Oppenheimer.—p. 1049.

Kahn Reaction or Wassermann Reaction?—Köhler reaches the conclusion that in routine examinations made primarily on old syphilis cases the rather expensive Wassermann test can be replaced by the Kahn test. However, if the Kahn test gives a positive reaction, a control Wassermann test has to be made before the serologic diagnosis can be considered reliable, because nonspecific fluctuations toward the positive side are quite frequent in the Kahn test. For the same reason a positive Kahn test cannot serve as the only criterion in beginning serorelapses. A positive Kahn reaction in case of a negative Wassermann reaction makes a more frequent control necessary. The Kahn test is unsuitable for purposes of dosimetry, for whereas the positivity of the Wassermann reaction diminishes in the course of effective treatment and thus indicates the efficacy of the treatment, the Kahn reaction is often unusually weak or gives sudden positive fluctuations.

Eye Disorders Caused by Dyeing of Eyelashes.—Bab asserts that the ophthalmologist is frequently consulted for acute and chronic irritations of the eyes, which can be traced to cosmetic procedures. Although the connection is not always evident, it often happens that in doubtful cases, in which the use of the cosmetics is discontinued, the irritation disappears. The author asserts that this applies to all types of cosmetics, to dyes, to the application of india ink and to eyebrow pencils, but he calls especial attention to the fact that even henna

dyes that are generally considered harmless as hair dyes may cause serious complications when applied to the eyelashes and eyebrows. He reports the histories of six patients in whom the dyeing of eyelashes and eyebrows with henna was followed by severe conjunctivitis, edema of the lids, blepharospasm, watering of the eyes, painfulness and, in some, even by the development of sties, marginal keratitis, erosions and ulcerations of the cornea and eczema of the brows. These symptoms never develop immediately but only after from twelve to twenty-four hours. The case reports indicate that the milder cases may heal in about twelve days, but the severer disorders persist for from five to more than nine weeks. Therapeutic measures are of little avail. Administration of analgesics and soporifics to counteract the pain and the insomnia is about all that can be done. The author thinks that these disorders are caused by a hypersensitivity to henna, but this is not found out until it is too late, and he considers it inadvisable to approve as harmless a substance that may cause such grave disorders.

Jahrbuch für Kinderheilkunde, Berlin

140: 1-124 (July) 1933

Osteogenesis Imperfecta. K. Haszmann and A. Verdino.—p. 1.
Mechanism of Bottle Nursing. G. O. Harnapp.—p. 31.
*Intermittent Fever in Children. H. Kleinschmidt.—p. 40.
Studies on Various Cutaneous Phenomena Occurring in Scarlet Fever. A. Stroë and I. Bazgan.—p. 53.
*New Form of Dystrophy in Congenital Syphilis (Asymmetry of Fingers). V. Mikulowski.—p. 91.
*Primary Tuberculous Focus Following Intramuscular Injection of Milk in New-Born Infants. A. C. Szampan.—p. 101.

Intermittent Fever in Children.—Kleinschmidt differentiates three types of intermittent fever: the intermittence on a small scale, the transitory type and the classic intermittent fever. Intermittence on a small scale he observed in a certain type of children whose disorders were generally diagnosed as psychosis, neurosis, unstable disposition or hysteria. He thinks that in these children the intermittent fever can be explained by a physiologically increased metabolism and by a lability of the center of temperature control. In the children with the transitory type of intermittent fever there were noted subacute tuberculosis, furunculosis, incretory and growth disturbances and neuritis, but they also showed nervousness and anxiety, and it is probable that these symptoms were the determining factors in the development of the intermittent type of fever. Regarding the classic form of intermittent fever, the author states that only those cases in which for several days in succession the temperature goes below 37 C. (98.6 F.) and above 39 C. (102.2 F.) can be considered belonging to this group. This type of fever was observed in tuberculous spondylitis, tuberculosis of the mesenteric lymph nodes, otitis media, bronchopneumonia and lobar pneumonia with pleural involvement, but there were also children in whom the intermittent fever could not be traced to a somatic disturbance but in whom certain neurotic symptoms were present. The author concludes that the intermittent fever is not bound up with certain diseases but that it is the result of a constitutional disturbance of the center of temperature control. Fever impulses are brought to the center from the changed metabolism or directly by toxins perhaps together with influences from other centers of the cerebral cortex. But these impulses are not sufficient to produce the intermittent fever. The most important factor is the mode of reaction of the center, which is determined by the constitution, and the essential component of the neuropathic constitution seems to be the psychic lability. The author found that most of these children were underweight and lived in an undesirable environment. The treatment should be mainly expectant, or a mild shock therapy can be tried. In some instances the fever disappears without any intervention whatever, but the cessation of the fever is not sufficient, and physical therapy, a suitable diet and particularly psychotherapy are advisable to get such children properly adjusted.

Dystrophy in Congenital Syphilis.—Mikulowski discusses the various deformities that are found in congenital syphilis. In watching for deformities of the hands, his attention was drawn to an asymmetry of the fingers. He reports a number of cases in which he observed this asymmetry, and he shows a photograph of the hands of one patient in whom the fourth finger of the right hand was 2 cm. longer than that of the left hand. He observed fifty cases of asymmetry of the fingers and demonstrated congenital syphilis in forty, or 80 per cent. From this high percentage of concurrence he concludes that asymmetry of the fingers has considerable diagnostic significance.

Tuberculous Focus Developing After Injection of Milk.—Szampan reports the histories of two nurslings, who, on account of ophthalmoblennorrhea neonatorum were given an intramuscular injection of milk. The milk had been brought to the boiling point, but in both nurslings a slowly growing abscess developed at the site of injection on the thigh and had to be incised. The regional inguinal lymph glands became swollen and remained enlarged for a considerable period. In one of the children, tubercle bacilli of the bovine type were grown on culture from the abscess material. In the second case this was not possible. The Pirquet test gave positive reactions quite early in both infants, and there were no signs of tuberculous changes in any other part of their bodies. The tuberculous abscess took a comparatively favorable course and finally healed completely. From three to four years after the development of the abscess, both children are quite well. After discussing various possibilities of pathogenesis, the author reaches the conclusion that the tubercle bacilli were most likely injected with the milk, and, since the efficacy of the milk injection is reduced by prolonged boiling (the protein bodies become denatured), he emphasizes the necessity of making sure that the milk comes from cows that are known to be free from tuberculosis.

Zeitschrift für klinische Medizin, Berlin

124: 435-693 (July 14) 1933. Partial Index

Oxygen Therapy in Patients with Cardiac and Pulmonary Disease. H. W. Knipping and G. Zimmermann.—p. 435.
*Multiple Myeloma and Hypoproteinemia. W. Chester.—p. 466.
*Spruelike or Pellagroid Disease. C. Froboese and E. Thoma.—p. 478.
Physiologic Decomposition of Blood Pigment. R. Nothhaas.—p. 490.
*Qualitative Changes in Hemogram During Jaundice. N. Klein and S. Szentmihályi.—p. 497.
Investigations on Pressure in Upper Portion of Stomach. O. Schiersmann.—p. 506.
Humoral (Colloidal) Conditions as Constitutional Signs. H. Storz and H. Schlungbaum.—p. 517.
Tuberculous Splenomegaly Combined with Cirrhosis of Liver. G. Hässelbarth.—p. 525.
Congenital Malformation of Urogenital Apparatus: Treatment of Uremia. R. Enger.—p. 532.
Irritated Stomach: Function and Pathology of Gastric Mucous Membrane. K. Westphal and W. Kuckuck.—p. 537.

Multiple Myeloma and Hypoproteinemia.—Chester mentions three factors that may lead to hypoproteinemia: loss of protein through the kidneys, deficient nutrition and decomposition of body protein as the result of infections. Because he could not understand why most investigators detected increased serum protein values in patients with multiple myeloma in spite of the presence of all factors that cause a reduction in serum protein (albuminuria, Bence-Jones protein and emaciation), he decided to study the serum protein in multiple myeloma. In two patients with multiple myeloma he noticed a decrease in the serum protein, but following a protein diet it increased rapidly. In the first patient there existed, in addition to amyloid deposits in the bone system, myelomatoid infiltrations of the lungs. The author stresses that there is a similarity between the clinical aspects of nephrosis and the malnutrition concurring with multiple myeloma. For this reason, precaution is necessary in the diagnosis of nephrosis in multiple myeloma. In patients with multiple myeloma, nephrotic degeneration should be thought of only in the presence of azotemia, limited concentration capacity of the kidney, solid deposits, protein and Bence-Jones protein in the urine, and in the absence of increased blood pressure and of changes in the fundus of the eye. Hypoproteinemia does not indicate nephrosis in cases of multiple myeloma, for it is only a sign of the malnutrition that is noticeable in all cachectic conditions.

Spruelike or Pellagroid Disease.—Froboese and Thoma call attention to the fact that in recent years it has been repeatedly pointed out that there is a certain parallelism between sprue and pellagra. This comparison was occasioned by the fact that in some cases the symptoms were only partly present, which made a definite classification difficult. Such cases have often been referred to as pellagroid or spruelike disturbances. The authors describe a case in which it was difficult to decide whether it should be considered as sprue or as pellagra. The clinical aspects and the course favored sprue, for all the char-

acteristic symptoms of sprue were present. However, the anomalies in pigmentation and the inflammatory dermatoses do not belong to the aspects of sprue but favored pellagra, as did also the histologic aspects. The authors reach the conclusion that the described case presents an intermediate condition between pellagra and sprue. They advise that changes in the glands of internal secretion, particularly of the suprarenals, should be watched for in both sprue and pellagra. The patient whose case is reported presented changes in the suprarenals. This aspect is important, because changes in the suprarenals have been observed in other cases of pellagra, and it has been assumed that the cutaneous pigmentations in pellagra may be related to suprarenal impairment.

Qualitative Changes in Hemogram During Jaundice.—Klein and Szentmihályi studied approximately 420 hemograms of forty patients with jaundice. On the basis of their observations they reach the following conclusions: 1. Jaundice caused only by obstruction and the mild parenchymatous (catarrhal) forms of jaundice are characterized by lymphomonocytosis. 2. The increase or the decrease in monocytes indicates the condition of the hepatic parenchyma (reticular system). 3. In conditions with severe destruction of the parenchyma, the blood picture has considerable differential diagnostic value, because in these conditions (carcinoma and atrophy) there occurs, corresponding to their severity, eosinolymphopenia, as well as absolute or relative monocytopenia, and the neutrophil cells generally show a deviation to the left.

Zentralblatt für Gynäkologie, Leipzig

57: 1569-1632 (July 8) 1933

*Quinine and Hypophyseal Extract in Treatment of Febrile Abortion. K. Habbe.—p. 1570.
Investigations on Equivalence of Urinary Substances Designated as Hormone of Anterior Hypophysis and of Similar Acting Substances from Hypophysis. A. Mahnert.—p. 1572.
*Biologic Hyperemization of Inflammations of Adnexa with Hormones of Anterior Lobe of Hypophysis. K. Hübscher.—p. 1575.
Do Chorial Cells Produce Hormone of Anterior Lobe of Hypophysis During First Weeks of Pregnancy? G. Maroudis.—p. 1580.
Determination of Ovarian Hormone in Urine. J. Pazourek.—p. 1582.
Eclamptiform Convulsions During and After Birth Resulting from Suppurating Meningitis. H. Kretzschmar.—p. 1584.
Attempt to Induce Abortion by Means of Soap Solution During Ninth Month of Pregnancy. J. Beaufays.—p. 1592.

Quinine and Hypophyseal Extract in Febrile Abortion.—Habbe reports observations on eighty-nine cases of febrile abortion, in which fetus and placenta had not been expelled. In forty-four of these cases the pregnancy had progressed less than three months and in forty-five it was between the third and sixth months. In a considerable number of these cases the uterine contractions were adequate, so that medication did not become necessary. However, in twenty-seven women of the first group and in thirty-nine of the second group the uterine contractions had to be stimulated by administration of quinine and of hypophyseal extract. The author advises that quinine should not be given in excess of 1 Gm. This quantity should be administered in the course of two hours in single doses of 0.25 Gm. each. Beginning with the second dose of quinine, hypophyseal extract is added. The author's aim in uncomplicated febrile abortion is to effect dilatation of the cervix and expulsion of the fetus by the natural forces and, if necessary, to stimulate and further them by medicaments. Then follows curettage with a dull instrument. Tamponade of the uterus is avoided as much as possible. The author thinks that, since febrile abortion occasionally involves great difficulties, it is advisable to hospitalize all such cases.

Hyperemization of Adnexa by Hormones of Anterior Hypophysis.—Hübscher resorted to the hormones of the anterior hypophysis in the treatment of inflammatory disorders of the female genitalia in twenty-five cases. Of ten cases in which prolan was employed, one showed improvement, others remained unchanged and in three cases an enlargement of the tumor was noticeable. Ten patients were treated with another hypophyseal extract and improvement became noticeable in three, but the author thinks that these improvements may be accidental. Of the five patients who were treated with urine from pregnant women, four showed improvement. A number of the cases that did not yield to the hormone treatments were later improved or cured by protein therapy, hot air treatments or diathermy. Thus the hormone treatment alone did not produce favorable results, but the author thinks that in combination with other methods, particularly with diathermy, it may eventually prove helpful. However, since the mode of action of prolan is not completely understood as yet and since it may even be harmful by accelerating tumor growth, great precaution is necessary if it is to be used in inflammatory disorders of the adnexa.

Norsk Magasin for Lægevidenskapen, Oslo

94: 713-824 (July) 1933

Spontaneous Pneumothorax. A. Tuxen.—p. 713.
Photography of Bacteria Colonies with Light Passing Through Colonies. T. Thjøtta.—p. 731.
*Intoxication with Calcium Cyanamide: Case. L. L. Linneberg.—p. 734.
Scurvy in Patient with Hemolytic Jaundice: Case. L. L. Linneberg.—p. 736.
Rat Bite Fever: Case. I. Schjøth-Iversen.—p. 739.
*Cerebral Osteochondroma Originating in Falx Cerebri. F. Platou.—p. 743.
Indications for Operative Interventions in Throat and Ears in Children and Their Significance. R. Moe.—p. 747.
*Radium Treatment of Abdominal Actinomycosis. R. B. Engelstad.—p. 759.
*Abortin Reaction in Undulant Fever. G. Gulowsen.—p. 764.
*Frequency of Cancer in the Insane. R. Opsahl.—p. 771.
Angioneurotic Symptom Complex During Arsphenamine Treatment. H. C. Gjessing.—p. 791.

Intoxication with Calcium Cyanamide.—Linneberg states that the intoxication in his patient developed during three days' work at emptying and filling sacks with a fertilizer, calcium cyanamide, and was marked by increasing headache with dyspnea, followed by a burning sensation in the throat and trachea. The breath smelled of almonds. The skin of the face, neck and hands was swollen and red with a bluish tint. Treatment consisted of injections of sodium thiosulphate. Headache with insomnia persisted after five months. Workers with this material should be protected by face masks.

Cerebral Osteochondroma Originating in Falx Cerebri.—In Platou's patient there was insomnia three or four years earlier, followed by diffuse headaches with occasional violent attacks, diplopia of several minutes' duration four or five times and, finally, protrusion of the left eyeball with slight nystagmus and choked disk in the right eye and beginning choked disk in the left eye. Roentgen examination indicated a tumor in or between the frontal lobes. Excision of the tumor, which required five hours, was done under local anesthesia. The tumor, of almost the size of a goose egg, was microscopically established as an osteochondroma. It originated from the inside of the dura at the transition to the falx, had no connection with the cranium and is thought to be due to a fetal factor. The patient continues well after three years. The only two cases of intracranial osteochondroma reported in the literature are cited.

Radium Treatment of Abdominal Actinomycosis.—Engelstad's patient with abdominal actinomycosis in the ileocecal region was successfully treated with radium and was without symptoms six months after the conclusion of the treatment. The entire affected region was covered with a prosthesis 16 by 16 cm. with 152 mg. of radium element, a radium-skin distance of 3 cm. being used; the length of treatment was ten days and the total dosage 60 Dominici. The unsatisfactory results of radium treatment of abdominal actinomycosis previously reported are ascribed at least largely to the technic, and protracted fractional irradiation with hard, strongly filtered rays (Coutard's method) is recommended.

Abortin Reaction in Undulant Fever.—Gulowsen finds this reaction persistent and thus suitable for retrospective diagnosis and says that the certainty, specificity and simplicity of the test together with the keeping quality of the abortin make the abortin reaction valuable in the diagnosis of undulant fever.

Frequency of Cancer in the Insane.—Opsahl's investigations seem to show that the previously assumed difference between the frequency of cancer in the insane and in the normal population is only apparent. He says that the seemingly low death rate from cancer in the insane, especially in those with schizophrenia, is probably to be explained by the higher death rate from other causes, especially tuberculosis, among the insane, and he sees no real difference in the death rate from cancer between schizophrenia and other forms of insanity. Like other investigators, he finds that cancer is frequently the immediate cause of the psychosis.